



SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, FEBRUARY 11, 1880.

OFFICIAL PAPERS.

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Rainfall, Weather, and State and Prospects of the Crops.

Statement showing Rainfall, Weather, and State and Prospects of the Crops in the different Districts of Bengal, as reported to Government during the week ending the 7th February 1880.

No.	District, and date of return.	Rainfall at Sudder Stations in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL.			
<i>Western Districts.</i>			
1	Burdwan, Feb. 7 '80	Nil	Weather—fair and bright. Rubber crops fairly good. Sugarcane inferior in Raneeunge for want of rain. Public health unusually good.
2	Hankoor, " 7 "	Nil	Weather—a little too warm for the time of year. Hot weather fast setting in. Crops progressing favorably. Pressing of sugarcane commenced in places. Rain wanted for ploughing. Small-pox and cholera in a milder type here and there; otherwise health good.
3	Beerbhoom, " 7 "	Nil	Weather—seasonable. Crops on ground, except sugarcane, doing well. Cattle disease still prevalent. A severe outbreak of cholera in Rampore Hât thana.
4	Midnapore, " 7 "	Nil	Weather—seasonable, perhaps a little warmer than it ought to be. State and prospects of crops favorable.
5	Hooghly, " 7 "	Nil	Weather—clear throughout week. Wind varying from north-east to south-west. Prospect of winter crops good. Public health good. A few cases of small-pox in thanas Serampore, Goopteeparah and Bolagur; cholera also in Serampore.
	Howrah, " 9 "	Nil	Weather—warmer. State and prospects of crops good. Small-pox still prevalent.

No.	District and date of return	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL—(Continued.)			
Central Districts.			
PRESIDENCY DIV.	6 24-Pergunnahs, Feb. 7 '80	Nil	Hot weather set in. Peas and pulses being gathered. Public health fair.
	7 Nudda, " 7 "	Nil	Weather—warm, clear, and fine. State of crops good.
	8 Jessore, " 7 "	Nil	Heavy fog generally in mornings. Days warm. Rain wanted, though crops on ground very fair. Health good.
	9 Moorshedabad, " 7 "	Nil	Weather—seasonable. Prospects of crops good. Both fever and cholera in mitigated forms reported from some thanas of Sudder circle. Small-pox not yet disappeared from Jungipore town.
RAJSHAHY AND COOCH BEHAR DIV.	10 Dinagepore, Feb. 6 '80	Nil	Weather—bright and seasonable. Mustard and sugarcane being cut. A fair outturn expected. Cholera and small-pox in some places.
	11 Rajshahye, " 7 "	Nil	Weather—fine and cool in mornings and evenings. Rubbee crops promising well. Common rice 17 seers per rupee.
	12 Rungpore, " 6 "	Nil	Weather—becoming warmer. Westerly winds commenced. State and prospects of winter crops continue good. Public health good.
	13 Bogra, " 7 "	Nil	Weather—generally fine; cloudy on 5th, with a few drops of rain. Sugarcane cut; a very good crop. Musur, kalai, tesi, and chena very promising.
	14 Pubna, " 7 "	Nil	Weather—clear and getting warmer. Prospects of spring crops good. Public health good.
	15 Darjeeling, " 7 "	Nil	Weather—cloudy and cold. In Terai no important crop in field. Land being prepared for dhadoi crop. On Hills wheat and barley ripening. Condition of crops good.
	16 Julpigoree, " 7 "	Nil	Weather—very warm for the time of year. Haimanti harvesting over; dhadoi cultivation commenced. Tobacco and mustard promising.
DACA DIV.	Cooch Behar, " 5 "	Nil	Heat abnormal for the time of year. Some nights almost warm. Prospects of all crops good. Rain, however, needed, especially to avert probability of cholera breaking out. Small-pox prevalent in places.
	Eastern Districts.		
	17 Dacca, Feb. 7 '80	Nil	Days warm with south wind; nights cold. Outturn of mustard excellent. Kalai also good. Prospects of other winter crops very good.
	18 Furreedpore, " 8 "	Nil	Weather—warm; mornings foggy. Crops and public health good.
	19 Backergunge, " 5 "	Nil	Weather—seasonable. Cold-weather crops doing well. Land being ploughed for til sowings.
	20 Mymensingh, " 6 "	Nil	Weather—getting warmer. State and prospects of crops favorable.
	21 Tipperah, " 6 "	Nil	Nights still cold, but days grow warm. Harvest of mustard nearly over and good. Prospects of spring crops excellent.
CHITTAGONG DIV.	22 Chittagong, Feb. 10 '80	Nil	Prospects of cold-weather crops good. Cholera died out except in Moiscal. Common rice about 18 seers per rupee.
	23 Noakholly, " 6 "	Nil	Weather—fine; sun hot; but cool, with mists in morning and evening. Winter crops doing well. Ploughing going on.
	24 Chittagong Hill Tracts, " 3 "	Nil	Weather—cold at nights, foggy in mornings. Mustard being gathered. Cutting of jooms begun. Tobacco, chillies, and other cold-weather crops doing well.
	Hill Tipperah, " 4 "	Nil	Weather—nights cold; days rather hot. State and prospects of crops fair. Public health good.

No.	District, and date of return.	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BEHAR.			
PATNA DIV.	25 Patna, Feb. 7 '80	Nil	Weather—seasonable. Rain wanted for <i>rubbee</i> .
	26 Gya, " 7 "	Nil	Weather—seasonable. Maximum reading in shade 86.5° Prospects of crops everywhere favorable, but a good shower of rain desirable. Public health generally good.
	27 Sushabad, " 7 "	Nil	Weather—cold and cloudy at times. Prospects of <i>rubbee</i> crops very promising. Prices of food-grains falling. Public health generally good.
	28 Durbhunga, " 7 "	Slight rain.	Weather—cloudy in beginning of week; clear since, with strong west wind. <i>Rubbee</i> promises well, but a little rain would improve prospects. Tobacco good. Mustard being reaped in places. Prices stationary. Public health good.
	29 Mozufferpore, " 7 "	Nil	Weather—mild. State of <i>rubbee</i> crops continues satisfactory, but a fall of rain would improve them.
	Sectamurhee	0.04	
	30 Sarun, " 7 "	Nil	Weather—seasonably cold; both east and west wind. <i>Rubbee</i> crops progressing well, though rain would be beneficial. Prices stationary. Public health good.
BHAGPUR DIV.	31 Champaran, " " "	.....	Report not received.
	32 Monghyr, Feb. 7 '80	Nil	Weather—warm, with dust-storms. Prospects of crops very good.
	33 Bhagulpore, " 7 "	Nil	Weather—seasonable. <i>Rubbee</i> crops promising, but would improve by a little rain. General health very good.
	34 Purneah, " 7 "	Nil	Strong westerly winds. Prospects of <i>rubbee</i> crops good. <i>Bhadai</i> ploughing commenced.
	35 Maldah, " 7 "	Nil	Weather—fair and cold. Midday heat increasing. Crops in field doing well; but rain in some places very much wanted. Prices stationary. General health continues good.
	36 Sonthal Pergahs, " 7 "	Nil	Weather—getting warm. Mustard nearly all cut with fair outturn. Linseed, gram and wheat looking well.
ORISSA.			
ODISHA DIV.	37 Cuttack, Feb. 7 '80	Nil	Weather—beginning to be hot. <i>Dalua</i> progressing well. Rain wanted for cotton and <i>dalua</i> rice, and also for ploughing. Small-pox still prevalent. Common rice 18½ to 21 seers per rupee.
	38 Pooree, " 5 "	Nil	Weather—seasonable. <i>Sarud</i> rice still being reaped. <i>Dalua</i> progressing well. Cold-weather crops getting on well. Some cereals have come into market. Small-pox appears to be prevalent in district. Common rice 19 to 26 seers per rupee.
	39 Balasore, " 6 "	Nil	Weather—fair, with cold nights. Threshing and storing of paddy still going on in parts of district. Harvesting of early <i>rubbee</i> crops continues. Prospects of other winter crops fair. Cases of cholera and small-pox in Bhudruck, Dalsahi and Bashudebpore; otherwise public health good.
CHOTA NAGPORE.			
South-West Frontier Agency.			
40	Hazareebagh, Feb. 6 '80	Nil	Weather—warmer and seasonable. Scanty showers in many parts of district. More rain would benefit <i>rubbee</i> crops. Prospects, however, generally good. Cattle disease in several stations. Public health in general good, though small-pox in some places.
41	Lohardugga, " 7 "	Nil	Weather—bright and cool. For want of rain, from six to eight annas of <i>rubbee</i> crops will, it is feared, be lost. Small-pox still prevalent.
42	Singbhoom, " 6 "	Nil	Weather—very warm and unseasonable. Very little crops now on ground. Want of rain done some damage. General health good.
43	Manbhoom, " 7 "	Nil	Weather—getting hotter. <i>Rubbee</i> crops (mustard, sugarcane, wheat, pulses, &c.) generally promise fairly. One or two cases of small-pox reported from Govindpore.

Published for general information.

CALCUTTA, STATISTICAL DEPT.,
The 10th February 1880.

A. MACKENZIE,
Secy. to the Govt. of Bengal.

RETAIL PRICES-CURRENT of Food-grains, Firewood, and Salt in the under-

Number.	DISTRICTS	QUANTITIES PER RUPEE BY																	
		WHEAT.			BARLEY.			RICE, BEST SORT.			RICE, COMMON.			BULRUSH MILLET— CUMBOO, BASRA.					
		Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.			
BENGAL																			
Western Districts.																			
1	Burdwan	A 11 4	11 0	12 0	19 0	18 0	18 8	14 12	15 0	13 8	15 12	16 0	14 8	...	...	...
2	Bankoora	B 11 8	11 0	10 4	14 0	14 0	14 0	15 0	13 5	15 0	20 0	20 0	17 8	...	...	...
3	Beerbhoom	C 11 4	11 0	11 0	...	...	...	14 0	14 0	10 8	16 8	18 0	18 8	21 0	...	...	
4	Midnapore	D 11 0	11 0	11 0	...	...	...	12 0	12 0	10 0	15 0	15 0	15 0	...	...	...
5	Hooghly	E 11 0	11 0	10 0	...	...	...	8 0	8 0	8 0	13 0	13 0	11 8	...	...	...
	Howrah	11 8	11 8	11 0	...	...	...	12 0	11 0	10 0	16 8	16 8	11 0	...	...	...
Central Districts.																			
	Calcutta	F 11 0	11 9	10 11	20 0	17 8	13 5	6 10	6 10	5 11	12 0	12 0	10 0	...	...	...
6	24-Pergunnahs	G ...	...	...	...	...	...	8 0	7 4	6 8	13 5	12 4	10 8	...	...	...
7	Nudda	11 7	11 7	11 7	20 0	...	...	13 5	12 12	10 0	13 14	13 10	11 0	...	...	...
8	Jessore	H 9 8	9 0	11 12	...	...	...	11 0	11 0	8 8	15 0	15 0	12 0	...	...	...
9	Moorshedabad	I 10 0	10 0	12 0	...	...	...	12 0	14 0	11 4	14 8	16 8	12 8	...	...	...
10	Dinapore	J 7 12	9 9	9 5	13 8	14 0	16 12	15 0	13 3	12 0	18 0	15 9	14 8	...	...	...
11	Rajshahye	{ 10 8 to 11 4 }	11 4	{ 12 0 to 13 8 }	15 0	15 0	12 0	{ 12 12 to 13 8 }	9 12 to 12 0	10 14 to 11 4	14 4 to 16 0	15 0	{ 13 2 to 13 14 }	...	...	...
12	Rungpore	K 11 4	11 4	9 0	...	...	...	11 4	11 8	11 4	17 7	17 5	13 8	...	...	...
13	Bogra	L 9 12	9 15	12 0	...	...	...	10 8	12 0	9 0	20 4	19 8	12 12	...	...	...
14	Pubna	M 10 0	10 0	13 8	...	...	...	8 0	8 0	8 0	17 0	16 8	13 0	...	...	...
15	Darjeeling	N 8 0	8 0	8 0	8 0	8 0	8 0	4 8	4 8	4 0	10 0	10 0	9 0	...	...	...
16	Julpigoree	8 7	10 0	8 8	...	...	...	12 0	13 0	10 0	16 0	16 0	12 0	...	...	...
Eastern Districts.																			
17	Dacca	O 11 7	10 12	9 8	16 0	16 0	...	16 0	16 0	10 0	20 0	20 0	12 4	...	...	...
18	Furzedpore	P 12 0	12 0	13 0	17 0	17 0	14 0	6 8	6 8	6 0	17 0	17 0	12 0	...	...	...
19	Backergunge	Q ...	...	...	...	...	...	13 8	13 0	11 0	19 0	18 0	12 0	...	...	...
20	Mymensingh	R 10 0	10 0	10 0	...	...	...	16 0	16 0	11 8	19 0	18 0	12 8	...	...	...

A In the interior the prices range as follow :—Wheat $12\frac{1}{2}$ seers, barley 15 to 26 seers, best rice $13\frac{1}{2}$ to $14\frac{1}{2}$ seers, common rice $15\frac{1}{2}$ to 16 seers, and gram 18 to $18\frac{1}{2}$ seers.

B In the interior the prices range as follow :—Wheat 9 to 12 seers, barley 17 to 34 seers, best rice 11 to 22 seers, common rice 15 to 22 seers, maize or Indian-corn 25 to 32 seers, and gram 8 to 12 seers.

C In the interior the prices range as follow :—Wheat 11 to 13 seers, best rice 13 to $17\frac{1}{2}$ seers, common rice 15 to 20 seers, and gram 11 to 13 seers.

D In Tamlook sub-division the prices are—Wheat (at Protapore) 12 seers, barley (at Protapore) 10 seers, best rice 10 to $13\frac{1}{2}$ seers, and common rice 16 seers.

E In the interior the prices range as follow :—Wheat 11 to 14 seers, barley 16 seers, best rice 7 to 15 seers, common rice 12 to 17 seers, and gram 10 to $12\frac{1}{2}$ seers.

F In the interior the prices range as follow :—Wheat 10 to $10\frac{1}{2}$ seers, barley 16 seers, best rice 6 to 8 seers, common rice 12 to 16 seers, and gram $12\frac{1}{2}$ to $12\frac{1}{2}$ seers.

G In the interior the prices range as follow :—Wheat $9\frac{1}{2}$ to 13 seers, barley 14 to 20 seers, best rice $7\frac{1}{2}$ to 15 seers, common rice 13 to 18 seers, and gram 10 to $15\frac{1}{2}$ seers.

mentioned Districts of Bengal for the Fortnight ending 31st January 1880.

THE SEER OF 80 TOLAHS.

GRAT MILLET— CHOLU, JOWAR.			LESSER MILLETS— RAGI OR MURWA AND CHENNA.			MAIZE OR INDIAN- CORN.			GRAM.			FIREWOOD.			SALT.			DISTRICTS.		
Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.			
BENGAL.																			Western Districts.	
S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.			
...	12 4	12 0	10 0	90 0	80 0	100 0	9 8	9 8	10 4	Burdwan.		
...	27 0	32 0	31 0	10 12	10 10	10 8	360 0	280 0	360 0	9 0	8 8	9 0	Bankura.		
...	24 0	22 0	...	12 0	11 8	9 8	200 0	180 0	180 0	9 0	9 0	9 0	Beerbhoom.		
...	10 0	9 0	9 0	160 0	160 0	160 0	9 0	9 0	9 0	Midnapore.		
...	12 0	12 0	9 0	120 0	120 0	120 0	9 0	9 0	9 0	Hooghly.		
...	12 8	12 8	10 0	105 0	105 0	105 0	10 0	10 0	10 0	Howrah.		
Central Districts.																		Eastern Districts.		
16 0	16 0	16 0	...	...	...	16 0	20 0	20 0	13 5	14 0	10 5	90 0	90 0	84 0	10 0	10 0	8 0		Calcutta.
...	12 0	12 4	10 0	90 0	100 0	90 0	9 6	9 6	9 0		24-Pergunnahs.	
...	13 5½	13 5½	10 0	120 0	120 0	120 0	9 11	9 11	9 11		Nuddea.	
...	10 12	10 8	9 0	110 0	110 0	110 0	8 0	8 0	8 8		Jessore.	
...	14 0	11 8	10 0	120 0	120 0	120 0	{ 7 0 7 0 8 0 to to to 9 0 9 0 10 0 }				Moorshedabad.	
...	10 0	10 0	7 4	180 0	180 0	160 0	8 8	8 4	8 4		Dinapore.	
...	11 4	12 0	7 8	240 0	240 0	{ 200 0 to 240 0 }			9 0		9 0	Rajahmundry.
...	9 0	9 0	9 0	120 0	120 0	106 0	7 14	7 14	7 14		Rangpur.	
...	9 12	10 14	8 13	67 8	67 8	67 8	8 7	8 7	8 4		Bogra.	
...	10 8	11 0	10 0	200 0	200 0	200 0	9 0	9 0	8 0		Pubna.	
...	8 0	8 0	12 0	16 0	16 0	16 0	6 8	6 0	6 0	160 0	160 0	160 0	4 0	4 8	5 0		Darjeeling.	
...	8 0	8 0	8 0	64 0	64 0	75 0	8 0	8 0	7 2		Julpigoree.	
...	12 4	12 4	9 6	91 8	106 0	96 0	9 6	9 6	9 0	Dacca.		
...	9 0	9 0	8 0	...	...	...	9 0	9 0	9 0	Farrukpore.		
...	10 0	10 0	9 0	100 0	100 0	120 0	8 8	8 8	8 8	Backergunge.		
...	10 8	9 8	8 0	...	...	...	8 12	8 12	8 8	Mymensingh.		

- H In the interior the prices range as follow:—Wheat 6 to 8 seers, best rice 9 to 16 seers, common rice 15 to 18 seers, and gram 8 to 10½ seers.
 I In the interior the prices range as follow:—Wheat 10 to 11 seers, best rice 12 to 17 seers, common rice 15 to 18 seers, and gram 12 to 18 seers.
 J In Nattore the prices are—Wheat 10½ seers, best rice 8½ seers, common rice 16½ seers, and gram 10½ seers.
 K In the interior the prices range as follow:—Wheat 11½ to 15 seers, best rice 9 to 20 seers, common rice 18 to 22½ seers, lesser millets (in Kurigram) 20 seers, and gram 8 to 9 seers.
 L In Serajunge the prices are—Wheat 10 seers, best rice 8 seers, common rice 16 seers, and gram 10 seers.
 M In the interior the prices range as follow:—Best rice 5 to 13 seers, common rice 12 to 20 seers, lesser millets (at Kurseong) 18 seers, maize or Indian-corn (at Kurseong) 13 seers, and gram 6 to 7 seers.
 N In the interior the prices range as follow:—Wheat 8 seers, best rice 7 to 13 seers, common rice 14 to 22½ seers, and gram 7½ to 9 seers.
 O In the interior the prices range as follow:—Best rice 12 to 18 seers, common rice 18 to 20 seers, and gram (at Naraingunge) 10½ seers.
 P In the interior the prices range as follow:—Best rice 10 to 13 seers, and common rice 17 to 20 seers.
 Q In the interior the prices range as follow:—Best rice 13 to 17 seers, common rice 14 to 18 seers, and gram 8 seers.
 R In the interior the prices range as follow:—Wheat 10 to 12 seers, best rice 8 to 25 seers, common rice 20 to 30 seers, and gram 8½ to 10 seers.

RETAIL PRICES-CURRENT of Food-grains, Firewood, and Salt in the under-

Number.		DISTRICTS.	QUANTITIES PER RUPEE BY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			WHEAT.			BARLEY.			RICE, BEST SORT.			RICE, COMMON.			BULWUSH MILLET— CUMBOO, BAJRA.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
			Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Eastern Districts.—(Contd.)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
61	Chittagong	S	9 0	9 0	10 0	14 0	13 0	11 0	18 0	18 0	13 0

* In the interior the price of common rice varies from 15½ to 21 seers.

S In the interior the prices range as follow:—Best rice 16 to 20 seers, and common rice 16 to 22 seers.

T In the interior the prices range as follow:—Best rice 12 to 24 seers, and common rice 17 to 28 seers.

U In the interior the prices range as follow:—Wheat 13½ to 14 seers, barley 20 to 25 seers, best rice 10 to 12 seers, common rice 17 to 19 seers, great millet 20 to 22 seers, lesser millets 18 to 27 seers, maize or Indian-corn 19½ to 27 seers, and gram 14 to 17 seers.

V In the interior the prices range as follow:—Wheat 12 to 14 seers, barley 25 seers, best rice 9½ to 18 seers, common rice 16 to 20 seers, murwa 20 to 25 seers, maize or Indian-corn 19 to 22 seers, and gram 14 to 16 seers.

W In the interior the prices range as follow:—Wheat 11½ to 18 seers, barley 20 to 30 seers, best rice 9 to 20 seers, common rice 13 to 22 seers, lesser millets 25 to 30 seers, maize or Indian-corn 17 to 32½ seers, and gram 15 to 23 seers.

X In the interior the prices range as follow:—Wheat 13 to 19 seers, barley 24 to 36 seers, best rice 12 to 20 seers, common rice 14 to 24 seers, lesser millets 27 to 33 seers, maize or Indian-corn 22 to 28 seers, and gram 14 to 20 seers.

Y In the interior the prices range as follow:—Wheat 13 to 14 seers, barley 20 to 22 seers, best rice 8½ to 12 seers, common rice 17½ to 18 seers, jowar 18 to 22 seers, murwa 19½ to 25 seers, maize or Indian-corn 18 to 26 seers, and gram 15 to 16½ seers.

mentioned Districts of Bengal for the Fortnight ending 31st January 1880.—(Contd.)

THE MEER OF MOTALAH.

GREAT MILLETS— OHOLUM, JOWAR.			LESSER MILLETS— RAGI OR MURWA AND CHENNA.			MAIZE OR INDIAN- CORN.			GRAM.			FIREWOOD.			SALT.			DISTRICTS.
Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	
Eastern Districts.—(Contd.)																		
S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	Chittagong.
...	9 0	9 0	7 4	120	0 120	0 120	0 8	0 8	0 8	Noakholly.
...	9 0	5 0	6 0	...	...	...	8 0	8 0	8 0	Tipperah.
...	10 0	9 8	7 12	...	...	...	8 12	8 12	8 12	Chittagong Hill Tracts.
...	320	0 320	0 320	0 8	0 8	0 10	Hill Tipperah.
...	8 0	8 0	7 6	...	...	...	8 0	8 0	8 0	BEHAR.
...	23 0	23 0	29 0	17 0	17 0	13 0	140	0 140	140	0 9	0 8	12 8	Patna.
...	27 0	27 0	...	22 8	23 0	20 8	17 0	16 8	9 8	140	0 140	140	0 8	8 8	8 0	Gya.
19 0	19 0	25 8	17 0	18 0	...	...	...	...	7 0	16 8	{ 9 8 10 0 }	120	0 120	0 160	0 9	0 9	0 9	Shahabad.
...	19 0	22 0	24 0	18 0	19 12	31 0	16 0	18 8	10 0	180	0 180	0 120	0 8	0 8	0 8	Durbhanga.
...	20 0	21 0	27 0	17 0	15 0	10 0	120	0 120	0 140	0 8	8 8	8 12	Muzafferpore.
18 0	18 0	26 8	17 12	18 4	21 4	18 8	19 0	26 4	15 4	16 0	9 8	160	0 160	0 200	0 8	8 8	8 4	Saran.
...	23 0	23 0	30 0	10 0	17 0	8 0	...	...	...	8 0	8 0	8 0	Ghampah.
...	17 13	17 10	26 4	14 11	14 11	11 8	126	0 105	0 147	0 8	8 8	8 6	Monghyr.
...	20 3	20 3	28 0	15 2	15 2	10 6	126	4 126	4 101	0 9	2 9	2 8	Bhagupore.
...	11 0	14 0	{ 9 0 10 0 }	120	0 120	0 160	0 8	0 8	0 8	Purneah.
...	20 0	...	...	12 0	13 0	8 0	120	0 120	0 100	0 8	8 8	9 0	Maldah.
...	28 0	25 0	11 0	11 0	8 12	200	0 200	0 200	0 8	0 8	0 8	0	Sonthal Pergas.
ORISSA.																		
...	18 0	16 2	...	...	...	...	15 12	15 12	16 6	160	0 160	0 200	0 12	0 12	0 11	Cuttack.
...	11 13	13 2	11 13	100	0 100	0 100	0 11	13 11	13 10	Pooree.
...	8 0	8 0	7 12	120	0 140	0 120	0 8	8 8	9 0	Balasore.
CHOTA NAGPORE.																		
South-Western Frontier Agency.																		
...	30 0	...	22 8	28 0	...	21 8	14 8	15 0	8 0	200	0 200	0 240	0 7	8 7	8 0	Hazareebagh.
...	43 0	45 0	25 0	28 0	28 0	20 0	10 0	10 0	10 0	160	0 160	180	0 8	0 8	0 7	Lohardugga.
...	12 0	12 0	10 0	180	0 180	0 240	0 8	0 7	8 8	Singbhoom.
32 0	32 0	...	64 0	64 0	64 0	32 0	32 0	24 0	11 0	11 0	9 0	120	0 120	0 130	0 8	0 8	0 8	Manbhoom.

2 In the interior the prices range as follow:—Wheat 12½ to 17 seers, best rice 16 to 20 seers, common rice 18 to 22 seers, lesser millets (in Soopole) 30 seers, and gram 11 to 19 seers.

21 In the interior the prices range as follow:—Wheat 12 to 20 seers, best rice 16 to 20 seers, common rice 19 to 22 seers, and gram 9 to 13 seers.

22 In the interior the prices range as follow:—Wheat 12 to 12½ seers, best rice 10 to 24 seers, common rice 13 to 25½ seers, maize or Indian-corn 14 to 25 seers, and gram 10 to 13½ seers.

23 In the interior the prices range as follow:—Wheat 12 seers, barley 20 to 30 seers, best rice (at Chutra) 14 seers, common rice 20 to 24½ seers, lesser millets 35 to 40 seers, maize or Indian-corn 28 to 30 seers, and gram 12 to 17 seers.

24 In the interior the prices range as follow:—Wheat 12½ to 15 seers, barley (in Dalongunge) 20-25 seers, best rice 19-20 to 28 seers, common rice 20-25 to 32 seers, murwa (in Dalongunge) 27 seers, murwa 40-50 to 45 seers, maize or Indian-corn (in Dalongunge) 40-50 seers, and gram 13-50 to 16 seers.

25 In Raghunathpore the prices are—Wheat 10½ seers, best rice 19 seers, common rice 22 seers, and gram 10 seers.

Published for general information.

A. MACKENZIE,

WHOLESALE PRICES-CURRENT of Food-grains Firewood, and Salt in

Number.	MARKS.	PRICES PER MAUND														
		WHEAT.			BARLEY.			RICE, BEST SORT.			RICE, COMMON.			BULRUSH MILLET— CUMBOO, BAJRA.		
		Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.
		R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.
1	Calcutta ...	3 7 0	3 7 0	3 12 0	2 0 0	2 4 0	2 15 6	6 0 0	6 0 0	6 15 9	3 5 0	3 5 0	4 0 0	...	...	...
2	Serajgunge ...	3 12 0	3 4 0	3 8 0	...	...	...	4 8 0	5 0 0	6 0 0	2 6 0	2 8 0	4 0 0	...	...	...
3	Decca ...	3 7 0	3 11 0	4 2 0	2 8 0	2 8 0	...	2 6 0	2 6 0	3 14 0	1 15 0	1 14 0	3 3 0	...	...	...
4	Naraingunge ...	...	...	...	...	...	...	2 4 0	2 4 0	3 10 0	2 2 0	2 2 0	3 3 0	...	...	...
5	Chittagong ...	...	...	...	...	...	...	2 14 0	2 14 0	3 10 0	2 4 0	2 4 0	3 0 0	...	...	...
6	Patna ...	2 5 6	2 5 6	3 1 3	1 9 6	1 10 6	2 0 0	3 1 3	3 1 3	4 3 6	2 3 6	2 3 6	2 5 6	...	...	...
7	Balasore ...	3 2 0	4 0 0	3 12 0	...	...	...	3 2 0	3 9 0	3 2 0	2 3 0	2 3 6	2 8 0	...	...	...
8	Pooree ...	...	...	...	...	...	...	...	...	...	2 3 0	2 6 0	2 2 0	...	...	...
9	Cuttack ...	3 10 0	3 10 0	3 0 0	...	...	...	3 10 0	3 10 0	3 4 0	2 0 0	2 0 0	2 2 0	...	...	...

CALCUTTA,
The 11th February 1880.

the undermentioned Marts of Bengal for the Fortnight ending 31st January 1880.

OF 40 SEEDS.

GREAT MILLET— CHOLU, JOWAR.			LARGER MILLET— RAGI OR MURWA AND CHENNA.			MAIZE OR INDIAN- COEN.			GRAM.			FINGERWOOD.			SALT.			MARTS.
Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	
R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	
2 8 02	2 8 02	2 7 9	...	...	...	2 8 02	0 0 2	0 0 3	0 0	2 12	0 3 13	9 0 6	3 0 6	3 0 9	0 4 0	0 4 0	0 4 8	Calcutta.
...	3 14 0	3 14	0 5 6	0	...	...	...	4 6 0	4 6 0	Sorajunge.
...	3 2 0	3 2	0 4 7	0 0 6	0 0 6	0 0 6	0 4 2	0 4 2	0 4 5	Dacca.
...	3 12 0	3 10	0 3 15	0 0 8	0 0 8	0 0 14	6 4 3	0 4 4	0 4 4	Naraingunge.
...	Chittagong.
...	1 12 0	0 1 12	0 1 6	2 5 6	2 5 6	3 13	0 4 9	0 4 9	0 4 9	4 8 0	4 10	0 5 0	Patna.
...	5 0 0	5 0 0	0 5 8	0 0 5	4 0 3	6 0 5	4 4 0	0 4 6	0 5 0	Bainsore.
...	Poorne.
...	2 0 0	2 5 0	...	...	...	...	2 5 0	2 5 0	2 1 0	0 4 0	0 4 0	0 3 0	3 5 0	3 5 0	3 6 0	Cuttack.

Published for general information.

A. MACKENZIE,
Secy. to the Govt. of Bengal.

STATEMENT SHOWING THE STOCKS OF RICE IN AND AROUND CALCUTTA.

NAMES OF MARKS.	STOCKS IN HAND AS COMPILED ON —												
	1st week of Feb. 1879.	1st week of Mar. 1879	1st week of April 1879.	1st week of May 1879.	1st week of June 1879.	1st week of July 1879.	1st week of Aug. 1879.	1st week of Sept. 1879.	1st week of Oct. 1879.	1st week of Nov. 1879.	1st week of Dec. 1879.	1st week of Jan. 1880.	1st week of Feb. 1880.
	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
Bellaghatts	5,50,800	8,31,500	6,00,000	5,10,000	5,04,500	4,71,000	4,54,000	2,50,500	3,94,000	3,33,200	1,22,000	1,93,900	3,51,000
Ooltadunga	37,300	47,400	50,000	60,300	58,000	46,500	63,000	11,300	35,500	37,400	27,900	32,400	50,300
Chitpore, Golabaree, Coomer- tooly, Hatkhola, and Culp Ghat.	3,51,100	4,53,500	4,68,300	3,64,800	3,77,000	3,55,300	4,03,500	4,50,100	6,31,400	5,21,700	4,35,400	5,67,900	5,14,500
Pahurichatta, Posta, and Jorabagan.	16,800	26,500	37,000	24,300	21,700	18,000	22,200	32,000	31,000	25,500	23,700	37,700	49,500
Tollygunge, Chittiah, Kidderpore, and Moonsingunge.	1,20,500	1,00,200	1,44,100	1,08,500	1,01,800	1,08,900	1,00,400	57,000	68,900	60,200	50,200	69,900	1,23,900
21 Minor Bazar (estimated) ...	2,40,000	2,40,000	2,40,000	2,40,000	2,40,000	2,40,000	2,40,000	2,40,000	2,40,000	2,40,000	2,40,000	2,40,000	2,40,000
Other retail shops, 8,129 in number (estimated.)	2,50,000	2,50,000	2,50,000	2,50,000	2,50,000	2,50,000	2,50,000	2,50,000	2,50,000	2,50,000	2,50,000	2,50,000	2,50,000
Baidyabatty, Nowabgunge, Bhuddressur, and Chander- nagore.	67,763	95,460	83,897	62,763	76,923	61,376	51,912	64,014	77,454	65,500	58,506	23,612	30,213
Total ...	18,45,563	21,04,880	18,84,297	16,38,505	16,33,525	15,81,176	16,41,612	13,73,914	17,48,234	16,05,550	13,04,706	13,55,213	16,10,612
On Railway premises both sides the river.	9,214 (on 3rd Feb. 79.)	2,300 (on 3rd March 79.)	2,776 (on 3rd April 79.)	3,104 (on 3rd May 79.)	3,506 (on 3rd June 79.)	2,802 (on 3rd July 79.)	6,374 (on 4th Aug. 79.)	5,256 (on 3rd Sept. 79.)	4,324 (on 3rd Oct. 79.)	1,259 (on 4th Nov. 79.)	9,756 (on 5th Dec. 79.)	11,294 (on 5th January.)	2,340 (on 3rd Feb. 80.)
Port Commis- sioners' re- turns.	56,064 (1st to 3rd Feb. 79.)	44,739 (1st to 3rd March 79.)	33,792 (1st to 3rd April 79.)	18,214 (1st to 3rd May 79.)	28,302 (31st May to 2nd June 79.)	56,377 (1st to 3rd July 79.)	42,981 (1st to 3rd Aug. 79.)	27,297 (1st to 3rd Sept. 79.)	37,113 (1st to 3rd Oct. 79.)	19,590 (1st to 3rd Nov. 79.)	26,319 (3rd to 6th Dec. 79.)	46,599 (1st to 3rd January.)	79,061 (1st to 3rd Feb. 80.)
On boats un- loaded as by (Canal returns...	59,533 (1st to 3rd Feb. 79.)	46,000 (1st to 3rd March 79.)	13,001 (1st to 3rd April 79.)	7,313 (1st to 3rd May 79.)	3,215 (31st May to 2nd June 79.)	12,748 (1st to 3rd July 79.)	4,918 (1st to 3rd Aug. 79.)	15,493 (1st to 3rd Sept. 79.)	21,128 (1st to 3rd Oct. 79.)	22,032 (1st to 3rd Nov. 79.)	8,452 (3rd to 6th Dec. 79.)	56,977 (1st to 3rd January.)	1,17,538 (1st to 3rd Feb. 80.)
Grand Total of Stocks ...	17,69,274	21,98,009	19,34,708	16,67,136	16,68,698	16,33,103	16,95,995	14,18,920	18,10,933	16,48,132	13,42,232	14,69,053	19,68,961
Probable stocks available for exportation by sea.	7 lakhs.	10 lakhs.	64 lakhs.	6 lakhs.	6 lakhs.	54 lakhs.	64 lakhs.	32 lakhs.	74 lakhs.	6 lakhs.	3 lakhs.	4 lakhs.	74 lakhs.

STATISTICAL DEPARTMENT,

The 6th February 1880.

A. MACKENZIE,

Secy. to the Govt. of Bengal.

Results of the Meteorological Observations taken at the Alipore Observatory from
1st to 7th February 1880.

Month.	Date.	Maximum in sun.	Mean pressure barometer at 32° Fah.	TEMPERATURE.				HYGROMETRY.				WIND.		Rain.	WEATHER.
				Mean.	Maximum.	Range.	Minimum.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.	Prevailing direction.	Miles recorded.		
1880.		☉	Inches	☉	☉	☉	☉	☉	Inches	☉	%			Inches	
Feb.	1st	140.7	30.014	66.0	70.7	20.0	53.7	57.0	0.392	52.2	60	Till 9 A.M. W N W, till 10.30 A.M. N through N W, till 10.30 P.M. W through N W, till midnight S W by W.	67	Nil	Clear and so.
"	2nd	143.5	.027	66.6	80.2	21.2	56.0	59.0	.402	52.9	61	Till 9 A.M. S W by W, till noon W N W, till 3.15 P.M. N W through W, till 9 P.M. W by S, till 9.15 P.M. N W by N through N W, till midnight S W through N W and W.	73		Chiefly clear and so.
"	3rd	141.7	.005	66.4	81.0	27.0	54.0	59.1	.408	53.2	60	Till 1 P.M. S W, till 7 P.M. W by S, till midnight S W.	75		Clear and so.
"	4th	137.7	20.945	65.9	81.9	23.3	58.6	64.1	.539	61.1	77	Till 9 A.M. S W, till midnight S.	145		Clear, f & so.
"	5th	136.7	.860	71.3	84.8	20.1	58.7	66.0	.771	62.7	77	Till 9 A.M. S, till 4.15 P.M. S W by W, till midnight S by W.	117		Chiefly clear, f & so.
"	6th	136.0	.860	72.0	83.8	17.5	60.3	66.9	.685	63.4	75	Till 8.30 A.M. S W by S, till 1 P.M. N by E through W and N W, till 8.30 P.M. W S W through N W and W, till midnight S W.	121		Clear and so.
"	7th	135.7	.942	71.9	82.8	17.8	65.0	64.6	.614	59.7	60	Till 2 A.M. S W, till 8.30 A.M. N W through W, till 1 P.M. N by E, till 8 P.M. W by N through N W, till midnight S W.	78		Clear, f & so.

The mean pressure of the seven days ... 29.956
 The average pressure of the corresponding period for 24 years, S. G. Office ... 29.971

☉
 The mean temperature of the seven days ... 69.0
 The average temperature of the corresponding period for 24 years, S. G. Office ... 70.2
 The extreme variation of temperature during the seven days ... 31.1
 The maximum temperature during the seven days ... 84.8

%
 The mean relative humidity during the seven days ... 70
 The average relative humidity of the corresponding period for 24 years, S. G. Office ... 70

Inches.
 The total fall of rain from 1st to 7th February 1880 ... Nil
 The average fall of the corresponding period for 24 years, S. G. Office ... 0.26
 The total fall from 1st January to 7th February 1880 ... 0.05
 The average fall of the corresponding period for 24 years, S. G. Office ... 0.65

The mean pressure, temperature, &c., are deduced from observations made at 6 h, 10 h, 16 h and 22 h, and from barograph and thermograph traces.

The maximum and minimum temperatures are obtained from self-registering thermometers. All the thermometers are verified, and the readings have been corrected to a standard constructed and verified at the Kew Observatory. They are exposed under a thatched shed open at the sides, and are suspended four feet above the ground.

The barometer readings are corrected approximately to those of the standard Newman's No. 86, formerly at the Surveyor-General's Office.

The hygrometric elements are obtained from Tables III, IV, and V of the official tables computed in the Meteorological Office, and based on Regnault's modifications of August's formula.

The direction and movement of the wind are taken from the trace of a Beckley's anemograph.

The mouth of the rain-gauge is one foot above the ground.

w dew, f fog.

METEOROLOGICAL OFFICE, INDIA,
 The 9th February 1880.

HENRY F. BLANFORD,
 Meteorological Reporter to the Government of India.

**Abstract of the results of Meteorological Observations taken at Alipore
Observatory in the month of January 1880.**

	Inches.	Date.	Hour.
The mean pressure of the month	29.958		
The average pressure of 24 years	30.014		
The highest pressure during the month	30.199	25th	10h.
The lowest pressure during the month	29.774	7th & 9th	16h.
The range of pressure during the month	0.425		
	○		
The mean temperature of the month	65.8		
The average temperature of 24 years	67.7		
The highest temperature during the month	82.4	17th	
The lowest temperature during the month	48.5	25th	
The range of temperature during the month	33.9		
The mean daily range of temperature during the month	21.2		
The greatest range of temperature in one day during the month	29.0	16th	
	%		
The mean humidity during the month	71		
The average humidity of 24 years	71		
	Inches.		
The mean vapour tension during the month	0.447		
The average vapour tension of 9 years	0.467		
The mean cloud proportion of the month	2.03		
	Inches.		
The total rainfall of the month	0.05		
The average fall of 48 years	0.43		
The greatest fall in 24 hours	0.05		
	Days.		
The number of rainy days in the month	1		
The average number of rainy days of 24 years	2		
	○		
The mean maximum equilibrium temperature of solar radiation of the month	131.5		
The mean difference of sun and air temperatures	53.6		
The greatest sun temperature	141.4	14th	
The greatest excess of sun over air temperature	61.4	14th	
The mean temperature of nocturnal radiation thermometer on woollen cloth	47.8		
The mean depression of nocturnal radiation thermometer below the minimum of air	8.8		
The greatest depression of nocturnal radiation thermometer below the minimum of air	12.8	1st	
	Miles.		
The mean movement of the wind per day	77.3		
The greatest movement of the wind in one day	196.0	24th	
The greatest movement of the wind in one hour	19	24th 11 to noon.	
The number of hours under each of the 8 points—			

N 151, NE 27, E 5, SE 7, S 68, SW 106, W 95, NW 133, Calm 152.

The results of observations at the Alipore Observatory are not rigorously comparable with the registers of past years (at the Park Street Observatory). The barometer is about 8 feet higher at Alipore, and other things being equal, reads therefore .003 lower. The diurnal range of temperature is also greater at Alipore, and the mean temperature apparently about 2° 8 lower; and finally, the thermometer, which has furnished the record of temperature at the Surveyor-General's Office during the last 20 years and upwards, is found to read 0.6 higher than the Kew standard thermometer, which is the standard of reference at the present Observatory.

H. F. BLANFORD,

Meteorological Reporter to the Govt. of India.

METEOROLOGICAL OFFICE, INDIA, the 7th February 1880.

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, BENGAL.

Statements showing the total amount of Traffic and Tolls on the Canals for the month of December 1879.

ORISSA CIRCLE.

Kendrapara Canal and its branch to Gundukia on the Gobri River.

LENGTH OF CANAL OPEN—54 MILES.

Number of boats.	Nature of cargo.	APPROXIMATE		TONNAGE OF BOATS.		Tollage.	Rate of toll per ton mile.
		Weight of cargo.	Value of cargo.	Mds.	Tons.		

LOCAL TRAFFIC.

(1) PRIVATE.

		Mds.	Rs.			Rs. A. P.	A. P.
45	Rice	14,880	59,280	24,417	472	30,140	745 8 0
19	Paddy	2,050	4,140	4,885	1 1/2	5,774	124 12 0
17	Sugar	3,040	60,800	6,170	220	9,750	230 0 0
9	Cotton thread	100	5,000	501	21	482	22 0 0
10	Jaggery	1,750	8,550	5,434	1 1/2	3,882	91 12 0
15	Salt	1,950	9,500	3,749	120	8,750	72 4 0
3	Chillies	180	1,320	300	15	498	11 0 0
2	Gross	320	1,320	435	22	880	22 4 0
11	Hides	2,550	20,500	4,000	145	9,772	134 4 0
2	Tinned	200	2,000	400	24	684	13 0 0
8	Miscellaneous	850	2,000	1,804	64	2,144	59 8 0
1	Gallinets	200	200	406	16	672	17 0 0
1	Cotton	200	2,000	331	12	192	3 4 0
1	Earthen pots	50	10	94	3	18	0 12 0
1	Caster seed	50	500	157	5	50	3 0 0
1	Cargelly	100	400	292	10	320	11 0 0
1	Jute	100	400	254	8	80	2 0 0
2	Timber	400	1,600	804	29	484	7 8 0
1	Gauja	50	40,000	207	10	420	10 0 0
26	Sleepers	8,000	34,100	14,506	5 1/4	21,278	501 12 0
2	Kharco	300	1,050	611	22	760	19 0 0
5	Gunny-bags	650	3,000	1,365	49	2,458	46 0 0
4	Dry-fish	110	1,100	358	13	500	12 4 0
1	Lime	50	15	120	4	168	4 0 0
4	Firewood	1,200	120	2,181	78	2,002	43 0 0
24	Miscellaneous goods, Ac., of Messrs. Bullock, Wellsted & Co.			15,321	544	21,760	464 4 0
13	Passengers (34 in number)			918	33	1,311	32 7 8
164	Empty boats			19,267	688	23,037	431 12 0
391	Total	49,470	2,64,674	107,552	3,831	141,404	3,228 11 8
638	Total of same month last year	48,783	1,96,052	131,002	4,079	107,402	4,194 5 5
MISCELLANEOUS.							
27	Passengers (708 in number)						326 11 5
...	Four rats bamboos (21,400 in number)		590				87 13 0
...	Timbers (7 in number)		28				3 5 0
27	Total		618				417 13 5
10	Total of same month last year		456				401 9 0

(2) STORES AND MATERIALS FOR IRRIGATION WORKS.

2	Bricks	600	25	688	34	544	19 0 0
2	Limestone	900	15	1,310	47	1,128	52 0 0
4	Firewood	1,000	160	2,316	83	3,496	90 0 0
5	Empty boats			1,484	53	1,837	36 8 0
13	Total	3,100	200	6,077	217	8,815	197 8 9
23	Total of same month last year	3,700	555	8,915	319	10,376	334 0 0
MISCELLANEOUS.							
10	Boats passed free*						
33	Total of same month last year						

In comparing with the corresponding month of last year, the private trade shows a decrease of Rs. 949 which is due to the falling off of traffic in items paid, rice, salt, jaggery, miscellaneous goods, empties, &c.

* A memorandum of free boats is attached.

Kendrapara Canal—continued.

Number of boats.	Nature of cargo.	APPROXIMATE		TONNAGE OF BOATS.		Ton mileage.	Tollage.	Rate of toll per ton mile.
		Weight of cargo.	Value of cargo.	Mds.	Tons.			

ABSTRACT.

		Mds.	Rs.				Rs.	A. P.	A. P.
418	Private, including miscellaneous	40,470	2,66,202	1,07,262	3,833	141,464	3,640	9 1	.....
28	Government stores, including miscellaneous	5,100	200	6,077	217	6,815	107	8 0	.....
440	Grand total	45,570	2,66,402	1,13,339	4,050	148,279	3,747	1 1*	.....
617	Grand total of same month last year	52,483	1,97,063	1,30,977	4,908	179,778	4,929	14 8	.....

* Of this, Rs. 798-2-2 is the total collection of Gobri Canal locks and Rs. 3,048-14-11 is the collection of Kendrapara Canal locks.

NOTE.

		Rs.	A. P.
Unrecovered balance on the 1st of the month	.....	1,089	7 11
Amount of tollage for the month	.....	3,844	1 1
Amount credited in the accounts for the month	.....	5,933	0 0
Balance at the end of the month	.....	2,820	1 2
Total	.....	3,037	7 10

MEMO. OF FREE BOATS.

Particulars.	No. of boats.	Maunds.	Tonnage.	Tollage realizable.
Boats passed for Government officials on duty	7	731	26	Rs. A. P. 14 13 0
Boats carrying materials for Jamhoo Harbour works	2	701	27	22 8 0
Steamer, &c., of Messrs. Bullock, Wellsted & Co.	0	3,174	113	93 0 0
Total	16	4,606	106	134 4 0

High Level Canal, Range I.

LENGTH OF CANAL OPEN—37 MILES.

LOCAL TRAFFIC.

(1) PRIVATE.

6	Paddy	1,010	2,090	1,892	08	2,207	55	8 0	.....
11	Rice	5,200	12,800	5,615	201	6,815	167	1 0	.....
10	Gingelly-seed	1,500	6,000	3,829	101	3,435	82	8 0	.....
13	Salt	1,500	7,800	2,702	06	3,234	76	4 0	.....
1	Jaggery	100	500	134	0	204	4	6 0	.....
3	Gum	100	320	840	12	182	4	8 0	.....
1	Timber	130	550	340	12	450	9	12 0	.....
1	Hides	150	1,600	261	9	516	7	8 0	.....
7	Yam	150	500	324	12	180	4	4 8	.....
3	Salt-fish	180	1,000	281	10	340	7	4 0	.....
1	Cocconut	20	50	50	2	68	1	8 0	.....
1	Chalk	160	600	271	10	329	5	11 0	.....
2	Furniture	150	150	213	8	272	5	11 0	.....
4	Bone-grass	350	90	871	31	808	23	8 0	.....
1	Straw	40	15	108	4	40	1	0 0	.....
23	Passengers (167 in number)	.....	.....	6,863	210	7,120	175	0 3	.....
44	Empty boats	.....	.....	3,753	133	3,540	87	4 0	.....
193	Total	8,844	34,975	25,013	927	29,603	723	5 9	0 67
187	Total of same month last year	9,674	37,408	24,507	877	28,316	673	5 6	0 48

(2) STORES AND MATERIALS FOR IRRIGATION WORKS.

31	Rubble stone	7,800	180	14,618	323	523	145	0 0	.....
4	Laterite stone	1,800	80	3,210	115	115	31	8 0	.....
37	Empty boats	.....	.....	5,220	180	3,604	91	12 0	.....
72	Total	9,600	160	23,037	623	4,041	268	4 0	1 07
190	Total of same month last year	29,646	3,173	82,754	2,958	14,006	924	4 0	0 07
MISCELLANEOUS.									
4	Boats passed free*	.....	.....	.....	.....	.....	.....	.....	.....
2	Total of same month last year	.....	.....	.....	.....	.....	.....	.....	.....

* A memorandum of free boats is attached.

High Level Canal, Range II.

LENGTH OF CANAL OPEN—12½ MILES.

Number of boats.	Nature of cargo.	APPROXIMATE		TONNAGE OF BOATS		Ton mileage.	Tollage.	Rate of toll per ton mile.
		Weight of cargo.	Value of cargo.	Mds.	Tons.			

LOCAL TRAFFIC.

(1) PRIVATE.

		Mds.	Rs.				Rs. A. P.	A. P.
10	Rice	2,030	10,600	5,083	182	2,366	90 0 0	.....
7	Paddy	1,830	2,700	2,194	76	972	41 0 0	.....
1	Salt	260	1,320	554	20	220	11 4 0	.....
1	Cotton	50	500	172	6	72	3 0 0	.....
1	Moong	100	400	163	6	73	3 0 0	.....
1	Jaggery	60	300	148	6	73	3 0 0	.....
7	Planks and logs	600	200	950	34	408	20 6 0	.....
18	Passengers (89 in number)	.....	.....	5,851	2 9	2,574	113 6 3	.....
14	Empty boats	.....	.....	5,125	112	1,418	58 8 3	.....
56	Total	5,060	15,930	18,181	630	8,205	365 13 6	0 8 3
81	Total of same month last year	4,535	15,920	12,579	449	5,221	260 10 0	0 9 1
MISCELLANEOUS.								
	Timbers (8 in number)	.....	32	.....	.....	.....	1 8 0	.....
	Small dougahs (31 in number)	.....	.....	.....	.....	.....	11 7 0	.....
	Total	.....	32	.....	.....	.....	12 15 0	.....
	Total of same month last year	.....	.....	.....	.....	.....	.....	.....

In comparing with the corresponding month of last year, the private trade shows an increase of Rs. 120 which is due to the increase of traffic in items rice, passengers, and empties.

(2) STORES AND MATERIALS FOR IRRIGATION WORKS.

31	Rubble stone	0,000	150	18,160	677	6,024	315 0 0	.....
2	Laterite stone	1,500	25	2,870	103	1,236	67 0 0	.....
4	Firewood	500	50	1,077	38	450	20 0 0	.....
1	Charcoal	100	150	224	8	96	4 0 0	.....
66	Empty boats	.....	.....	9,800	350	4,200	180 0 0	.....
84	Total	11,100	375	30,137	1,076	12,012	583 0 0	0 8 7
44	Total of same month last year	5,614	1,088	10,022	671	3,940	390 8 0	1 3
MISCELLANEOUS.								
	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.
1	Total of same month last year	.....	.....	.....	.....	.....	.....	.....

ABSTRACT.

56	Private, including miscellaneous	5,060	15,982	18,181	650	8,205	365 12 6	.....
84	Government stores, including miscellaneous	11,100	375	30,137	1,076	12,012	583 0 0	.....
139	Grand total	16,160	16,357	48,318	1,726	21,117	950 12 6	.....
127	Grand total of same month last year	10,149	17,617	28,601	1,020	9,167	556 8 0	.....

NOTE.

Unrecovered balance on the 1st of the month	.....	.....	.....	.....	.....	Rs. A. P.
Amount of tollage for the month	.....	.....	.....	.....	.....	1,428 13 6
Amount credited in the accounts for the month	.....	.....	.....	Total	.....	2,579 10 0
Balance at the end of the month	.....	.....	.....	.....	.....	1,671 12 6
						907 13 6

High Level Canal, Range III.

LENGTH OF CANAL OPEN—6½ MILES.

LOCAL TRAFFIC.

(1) PRIVATE.

1	Jaggery	65	323	174	6	43	3 0 0	.....
2	Paddy	200	400	420	16	106	8 0 0	.....
80	Passengers (71 in number)	.....	.....	7,810	270	1,926	150 10 6	.....
23	Total	265	723	8,404	290	2,075	161 10 6	1 0 3
23	Total of same month last year	630	1,920	2,919	106	872	53 10 0	0 11 3
MISCELLANEOUS.								
	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.
	Total of same month last year	.....	148	.....	.....	.....	8 12 0	.....

In comparing with the corresponding month of last year, the private trade shows an increase of Rs. 99 which is due to the increase of traffic in item passengers only.

High Level Canal, Range III—continued.

Number of boats.	Nature of cargo.	APPROXIMATE		TONNAGE OF BOATS.		Ton mileage.	Tollage	Rate of toll per ton mile.
		Weight of cargo.	Value of cargo.	Mds.	Tons.			
(2) STORES AND MATERIALS FOR IRRIGATION WORKS.								
...	Nil.	Mds.	Rs.				Rs. A. P.	A. P.
		Nil	Nil	Nil	Nil	Nil	Nil	Nil
39	Total of same month last year	3,403	1,704	19,652	588	2,989	203 0 0	1 4 3
ABSTRACT.								
22	Private, including miscellaneous	Mds.	Rs.				Rs. A. P.	A. P.
	Government stores, including miscellaneous	205	725	8,404	300	2,073	161 10 0	.....
23	Grand total	205	725	8,404	300	2,073	161 10 0	.....
61	Grand total of same month last year	4,123	3,941	13,591	498	3,261	225 7 0	.....

NOTE.

		Rs. A. P.
Unrecovered balance on the 1st of the month	...	151 7 8
Amount of tollage for the month	...	161 10 6
	Total	313 2 2
Amount credited in the accounts for the month	...	139 5 4
Balance at the end of the month	...	173 12 6

SOUTH-WESTERN CIRCLE.

Midnapore Canal.

LENGTH OF CANAL OPEN—53 MILES.

LOCAL TRAFFIC.

(1) PRIVATE

21	Betel-leaves	1,110	5,625	3,325			11 13 9	
9	Betel-nuts	850	3,400	1,000			9 6 0	
3	Bones	270	270	5 7			5 4 0	
2	Bricks and tiles (4,000 in number)	400	100	9 7			5 0 4	
24	Brass and copper and their manufactures	2,020	71,400	9,881			85 5 3	
19	Coal and coke	6,325	1,000	14,475			109 3 0	
11	Cotton, raw	875	10 39	2,700			21 9 3	
24	Cocoanuts (131,100 in number)	1,704	1,278	6,415			96 11 0	
43	Cotton, twist and yarn (European)	4,745	17,128	14,425			134 11 0	
10	Do. piece-goods (European)	573	72,300	2,771			25 12 6	
19	Do. ditto (Indian)	594	48,000	2,000			39 12 6	
33	Curd	717	2,000	4,000			51 14 0	
2	Cattle (8 in number)	35	165	4 30			5 9 9	
970	Empty boats			81,000			651 13 3	
24	Earthenware	2,240	877	5,000			25 1 0	
5	Firewood	168	77	8 25			6 11 9	
35	Fruits and nuts of all kinds	7,170	8,070	14,875			207 10 0	
73	Gram and pulse	8,270	31,780	24,775			209 0 6	
20	Goats and sheep (805 in number)	100	1,200	1,770			17 12 0	
9	Gunny-cloths (330 pieces)	400	2,700	1,700			6 9 0	
4	Horns	205	2,050	1,000			8 5 0	
17	Hides of cattle, untanned (16,000 in number)	1,875	32,724	4,000			55 11 3	
1	Iron and its manufactures	30	300	200			1 12 0	
10	Indigo	1,108	1,08,350	3,725			103 12 0	
46	Jute, raw	5,300	20,400	12,000			66 8 0	
5	Limeoil	875	2,775	1,000			16 12 0	
3	Liquor	40	2,000	215			3 12 9	
78	Miscellaneous	3,368	8,064	14,875			157 1 3	
45	Mustard	6,380	26,920	15,000			100 1 0	
5	Oil	445	5,020	1,725			33 13 0	
11	Oil-cake	641	1,044	2,450			29 14 6	
12	Other oilseeds	2,300	7,025	5,000			65 4 6	
2	Other saline substances	50	125	225			2 13 0	
1,260	Passenger boats			71,700			802 5 0	
183	Paddy	20,542	26,950	40,000			653 0 6	
100	Rice	12,114	34,986	26,000			267 6 6	
25	Silk, raw	461	80,140	4,600			89 10 0	
68	Salt	16,030	68,220	36,730			424 14 6	
19	Sand	3,250	408	1,075			22 10 6	
5	Stone-plates	870	5,150	1,070			19 5 0	
26	Sugar, unrefined	2,840	10,570	6,000			81 2 0	
56	Sulphur (1,701 in number)	2,773	4,022	2,000			78 15 0	
10	Synops	1,780	16,700	4,225			58 5 0	
7	Sundry pl'es	430	164	1,275			10 0 0	
23	Straw (561 bahnus)	5,440	1,774	12,120			50 7 0	
21	Timbers (117 in number)	1,113	2,000	1,300			43 12 0	
27	Tobacco	3,355	21,195	8,000			101 3 0	
8	Vegetables and other kinds of provision	200	230	840			6 14 9	
10	Wheat	800	3,600	2,400			20 4 6	
3,403	Total	1,51,052	10,33,778	4,83,373	17,335	321,108	5,035 2 6	0 3
2,729	Total of same month last year	1,55,723	12,75,076	5,55,170	19,042	308,875	4,909 10 9	0 3
MISCELLANEOUS.								
	Passengers (12,641 in number)						204 6 4	
	Demurrage, &c.						24 14 5	
18	Boats passed free							
19	Total						276 4 2	
16	Total of same month last year						216 8 9	

Midnapore Canal—continued.

Number of boats.	Nature of cargo.	APPROXIMATE		TONNAGE OF BOATS.		Ton mileage.	Tollage.	Rate of toll per ton mile.
		Weight of cargo.	Value of cargo.	Mds.	Tons.			

(2) STORES AND MATERIALS FOR IRRIGATION WORKS.

		Mds.	Rs.				Rs. A. P.	A. P.
6	Coal	2,500	775	4,425			25 15 0	
1	Empty boats			225			1 15 0	
6	Total	2,500	775	4,650	105	2,595	27 13 0	
114	Total of same month last year	40,305	8,548	82,170	2,934	46,394	710 6 9	

ABSTRACT.

3,416	Private, including miscellaneous	1,34,032	10,33,778	4,86,475	17,335	321,148	6,361 7 3	
6	Government stores, including miscellaneous	2,500	775	4,650	105	2,595	27 13 0	
3,422	Grand total	1,36,532	10,34,553	4,91,125	17,440	323,743	6,389 4 3	
3,857	Grand total of same month last year	2,32,027	12,80,024	6,16,340	21,070	555,209	5,836 9 8	

* This includes tolls on the Narainpur Channel amounting to Rs. 83-0-0.

NOTE.

	Rs. A. P.
Unrecovered balance on the 1st of the month	953 13 3
Amount of tollage for the month	4,889 4 3
Total	5,843 1 6
Amount credited in the accounts for the month	5,710 10 3
Balance at the end of the month	632 7 3

Hidgellee Tidal Canal.

LENGTH OF CANAL OPEN—29 MILES.

LOCAL TRAFFIC.

(1) PRIVATE.

2	Betel-nut	275	3,800	725			13 2 3	
1	Bamboos (300 in number)	10	50	825			2 3 9	
4	Coal	405	110	985			7 7 0	
23	Cotton, raw	38	1,244	375			3 2 3	
6	Coconuts (8,900 in number)	101	315	873			9 4 9	
6	Earthenware (10,800 in number)	270	162	950			8 11 6	
54	Empty boats			41,300			376 6 0	
2	Fire-wood	410	102	1,070			7 5 6	
2	Fish-boat	12	30	110			0 12 0	
5	Ghosting	305	32	725			4 15 9	
5	Hental-wood	332	155	925			7 0 0	
4	Hemp	450	2,049	1,100			10 10 0	
3	Jute	140	490	410			7 6 9	
1	Mats (1,000 in number)	100	500	400			2 12 0	
6	Mustard	240	170	1,005			0 14 0	
50	Miscellaneous	4,380	20,642	14,245			153 14 4	
2	Oil-cake	60	60	100			1 4 9	
135	Paddy	15,024	18,629	27,365			325 10 9	
65	Passenger-boats			4,805			50 4 6	
250	Rice	25,021	60,214	49,000			403 6 6	
1	Sugar, unrefined	15	30	40			0 7 0	
3	Skits (500 pieces)	50	1,003	275			2 15 9	
42	Straw (405 kahans)	6,525	1,025	12,315			95 9 0	
14	Sand	2,025	108	4,425			30 6 9	
80	Salt	3,208	12,832	6,145			40 9 8	
1	Tabacco	10	60	90			0 9 9	
18	Timber boat	1,310	53,150	1,390			11 14 9	
2	Vegetable	12	36	40			0 4 0	
1,342	Total	60,299	1,41,009	1,71,065	6,131	90,513	1,671 9 9	0 3 3
2,023	Total of same month last year	1,09,423	2,72,988	2,93,775	10,492	161,592	2,895 2 6	0 8 3
MISCELLANEOUS.								
	Passengers (337 in number)						9 14 9	
	21 rafts of timber (414 in number)						70 3 0	
	Demurrage, &c.						14 8 9	
	Total						94 4 6	
	Total of same month last year						50 7 8	

ABSTRACT.

1,342	Private, including miscellaneous	60,299	1,41,009	1,71,065	6,131	90,513	1,663 14 3	
	Government stores, including miscellaneous							
1,342	Grand total	60,299	1,41,009	1,71,065	6,131	90,513	1,663 14 3	
2,023	Grand total of same month last year	1,09,423	2,72,988	2,93,775	10,492	161,592	2,925 10 9	

NOTE.

	Rs. A. P.
Unrecovered balance on the 1st of the month	292 12 6
Amount of tollage for the month	1,665 14 3
Total	1,958 10 0
Amount credited in the accounts for the month	1,830 0 0
Balance at the end of the month	128 10 0

SONE CIRCLE.

Arrah Canal.

LENGTH OF CANAL OPEN—65 MILES.

Number of boats.	Nature of cargo.	APPROXIMATE		TONNAGE OF BOATS		Ton mileage.	Tollage.	Rate of toll per ton mile.
		Weight of cargo.	Value of cargo.	Mds.	Tons.			

LOCAL TRAFFIC.

(1) PRIVATE.

		Mds.	Rs.				Rs. A. P.	A. P.
10	Rice	2,277	5,687	3,836	125	8,911	47 15 0	
10	Wheat	4,420	15,260	5,623	197	15,091	29 6 0	
37	Salt	10,340	35,100	15,810	505	20,430	27 6 0	
37	Other articles of food	4,934	14,802	8,644	308	10,528	16 6 3	
6	Til	1,323	6,025	1,044	42	1,086	18 14 6	
2	Linseed	1,122	5,010	1,313	48	1,361	20 11 3	
2	Lime	245	40	448	16	464	9 4 9	
1	Pipe	25	11	77	2	77	1 8 6	
4	Sourkes	479	250	720	25	745	5 11 0	
10	Stones	3,319	415	4,211	158	7,460	41 2 9	
2	Peace-goods	250	3,000	404	14	1,120	5 12 9	
8	Leather	300	3,700	476	15	757	8 5 3	
1	Camp	135	400	143	5	205	1 15 3	
1	Garo	322	1,610	432	15	615	6 10 3	
1	Iron	15	13	45	1	67	0 4 0	
1	Treasure	15	34,000	140	5	400	2 15 6	
1	Spices	300	1,000	682	17	1,360	11 4 0	
1	Boxes	130	100	212	8	696	3 8 3	
3	Straw			658	23	506	5 1 3	
4	Tobacco			1,240	44	2,524	20 0 9	
10	Passengers (67 in number)			808	72	1,304	17 0 9	
14	Empty			4,568	163	3,327	26 1 3	
167	Total	20,080	1,27,521	52,055	1,855	88,318	716 8 3	0 1
250	Total of same month last year	71,000	1,86,392	1,34,832	4,810	261,676	1,122 11 9	0 1
MISCELLANEOUS.								
...	28 rafts of bamboos and buliahs (62,772 in number).						32 6 6	
10	Total of same month last year		25				12 12 6	

(2) STORES AND MATERIALS FOR IRRIGATION WORKS.

2	Iron	420	2,140	638	22	1,276	13 2 0	
3	Empty			563	19	1,044	5 12 3	
6	Stores	840	131	1,144	48	725	3 15 6	
1	Koodals	115	4,000	165	5	95	0 15 0	
12	Total	1,375	6,971	2,700	94	3,140	21 12 9	0 1
77	Total of same month last year	10,350	1,110	25,256	800	15,795	132 2 6	0 1
MISCELLANEOUS.								
...	One raft of timber (22 in number)*						12 6 0	
...	Total of same month last year							

ABSTRACT.

167	Private, including miscellaneous	20,080	1,27,521	52,055	1,855	88,318	716 15 3	
19	Government stores, including miscellaneous	1,375	6,971	2,700	94	3,140	21 12 9	
170	Grand total	21,455	1,34,492	54,755	1,949	91,458	738 8 0	
346	Grand total of same month last year	90,350	1,84,436	1,60,088	5,709	277,349	1,287 10 9	

* Canal closed at Diliab Lock No. 8 from 1st to 7th December, both days inclusive; hence decrease in tolls.

NOTE.		Rs. A. P.
Unrecovered balance on the 1st of the month		215 5 11
Amount of tollage for the month		785 2 0
	Total	1,000 7 11
Amount credited in the accounts for the month		737 2 6
Balance at end of the month		263 5 5

Western Main Canal.

LENGTH OF CANAL OPEN—22 MILES.

LOCAL TRAFFIC.

(1) PRIVATE.

7	Wheat	2,800	5,600	3,775	135	3,510	54 4 3	
6	Rice	1,700	3,400	2,400	85	2,230	34 8 0	
2	Ghee	400	5,000	650	23	308	9 5 6	
3	Zorah	600	12,000	825	30	404	11 13 9	
2	Linseed	1,000	5,000	1,525	47	1,342	19 0 9	
1	Teel	300	1,200	425	15	300	6 1 9	
1	Ghawas or chatters	300	150	425	15	300	6 1 9	
3	Stone	600	30	875	31	800	6 4 6	
10	Empty boats			725	26	572	2 15 6	
3	Passenger-boats (13 in number)			150	5	106	1 13 6	
35	Total	7,700	31,380	11,375	412	10,414	153 8 5	0 38
30	Total of same month last year	10,975	60,615	10,875	603	16,048	218 8 3	0 27

Patna Canal—continued.

Number of boats.	Nature of cargo.	APPROXIMATE—		TONNAGE OF BOATS		Ton mileage.	Tonnage.	Rate of toll per ton mile.
		Weight of cargo.	Value of cargo.	Mds.	Tons.			

ABSTRACT.

		Mds.	Rs.				Rs.	A.	P.
184	Private, including miscellaneous	0,102	34,738	10,922	708	32,011	342	1	3
89	Government stores, including miscellaneous	148	1,028	4,135	120	1,805	27	10	0
163	Grand total	0,340	35,766	24,957	828	33,816	369	11	3
363	Grand total of same month last year	34,203	75,810	90,250	3,207	18,224	1,534	0	11

Two locks under repair from the 15th December.

NOTE.

	Rs.	A.	P.
Unrecovered balance on the 1st of the month	...	...	...
Amount of tollage for the month	...	...	...
Total	1,000	1	6
Amount credited in the accounts for the month	...	...	...
Balance at the end of the month	329	4	9

ABSTRACT.

CANALS.	TOLLAGE OF THE YEAR 1879-80.			TOLLAGE OF THE YEAR 1878-79.			REMARKS
	During the month.	To end of month.		During the corresponding month.	To end of cor- responding month.		
ORISSA CIRCLE.							
	Rs.	A.	P.	Rs.	A.	P.	
Kendrapara	3,944	1	1	23,850	14	1	
High Level, Range I	1,291	9	9	6,331	10	3	
Taldunda	281	9	1	1,746	11	5	
High Level, Range II	950	12	6	9,244	6	9	
Ditto, do. III	161	10	6	1,059	12	10	
				265	7	0	
Total Orissa Circle	6,228	10	11	42,232	7	4	
				7,459	16	4	
				32,430	11	10	
SOUTH-WESTERN CIRCLE.							
Midnapore	5,389	4	3	74,079	7	0	
Hudgelice Tidal	1,605	14	3	43,735	13	3	
				2,925	10	9	
Total South-Western Circle	7,055	2	6	1,17,815	4	3	
				8,762	4	0	
				1,02,023	12	8	
SONE CIRCLE.							
Arrah	785	2	0	8,496	7	4	
Western Main	152	5	3	1,004	7	0	
Patna	369	11	9	10,710	14	1	
				1,634	0	11	
Total Sone Circle	1,307	3	0	20,211	12	5	
				3,034	11	11	
				21,036	4	5	
GRAND TOTAL							
	14,593	0	5	1,80,250	8	0	
				19,305	14	3	
				1,55,601	12	11	

H. C. LEVINGE,

Joint-Secy. to the Government of Bengal,

P. W. Dept., Irrigation Branch.

The 3rd February 1880.

EAST INDIA'S RAILWAY.

	COACHING TRAFFIC.				MERCHANDISE AND MINERAL TRAFFIC.				TRAIN MILES RUN.							
	No. of passengers.	Coaching receipts.		Weight carried.	Receipts.		Total Traffic Receipts.		Coach- ing.	Merchan- dise.	Total.					
		Rs.	A. P.	£	s.	d.	Rs.	A. P.	£	s.	d.					
Total traffic for the week...	153,631	2,70,544	12 0	25,615	15 5	16,92,757	0	6,65,872	8 0	61,038	6 3	9,15,817	4 0	54,561	100,854	184,206
Or per mile of railway .....	.....	185	0 6	10	19 11	.....	.....	441	12 0	40	0 11	627	2 11	.....	.....	.....
For previous 4 weeks of half-year	505,682	8,78,379	5 3	80,518	1 10	51,14,787	0	21,72,658	5 0	100,160	6 11	30,51,037	8 3	170,485	280,934	530,327
Total for 4 weeks	659,313	11,47,828	15 3	106,133	17 8	68,07,494	0	28,38,530	13 0	230,108	13 2	30,00,374	12 3	234,044	409,519	703,563
COMPARISON.																
Total for corresponding week of previous year	163,224	2,30,155	11 3	21,022	12 1	15,88,618	0	6,08,048	0 6	55,730	12 6	8,47,224	4 9	52,855	129,181	178,036
Per mile of railway, corresponding week of previous year .....	.....	158	10 0	14	10 11	.....	.....	403	6 10	36	10 7	603	1 7	.....	.....	.....
Total to corresponding date of previous year	714,004	10,75,430	13 8	98,551	8 3	70,88,808	30	28,92,497	15 4	264,228	10 0	39,57,928	13 0	242,464	634,423	790,887

Approximate Return of Traffic for week ended 31st January 1880 on 171½ miles open.

	COACHING TRAFFIC.				MERCHANDISE AND MINERAL TRAFFIC.				Total receipts.				
	Number of passengers.	Coaching receipts.		Weight carried.	Receipts.								
		Rs.	A. P.		£	s. d.	Rs.	A. P.		£	s. d.		
Total traffic for the week	40,769	51,511	0 0	4,721	10 10	2,50,530	0	42,015	0 0	3,254	2 6	8,875	19 4
On per mile of railway	257	289	14 8	27	0 10	1,438	25	244	12 10	22	8 10	49	18 8
For previous week of half-year	151,844	1,02,067	0 0	9,957	16 2	7,42,413	0	1,35,777	0 0	12,343	4 6	23,414	0 6
Total for 5 weeks	182,612	1,60,578	0 0	14,710	13 0	9,92,953	0	1,77,923	0 0	10,300	7 0	31,620	0 0
COMPARISON.													
Total for corresponding week of previous year	38,550	35,300	0 3	3,235	17 4	1,77,475	27	32,973	0 8	3,013	4 0	6,219	5 6
Per mile of railway, corresponding week of previous year	243	222	5 10	20	7 8	1,117	38	207	1 3	16	10 0	30	7 4
Total to corresponding date of previous year	179,994	1,41,703	0 6	12,089	10 0	7,20,761	10	1,34,366	7 3	12,370	0 3	26,350	10

Weekly Statement of Traffic Receipts.

No. 52.

Latest return received.	Name of Railway.	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1ST JANUARY		Total increase in 1879.	Total decrease in 1879.
			Last 10 days of December 1878.	Last 11 days of December 1879.	To 31st December 1878.	To 31st December 1879.		
			Miles.	Rs. A. P.	Rs. A. P.	Rs. A. P.		
31st December 1879	Northern Bengal	280	55,652 0 0	66,345 0 0	9,61,179 0 0	13,51,281 0 0	4,07,102 0 0	.....
17th January 1880	Tirhoot	82	15,171 0 0	16,727 0 0	4,44,594 0 0	4,57,742 0 0	2,948 0 0	.....
24th ditto	Calcutta and South-Eastern	28	8,105 0 1	4,001 0 0	1,25,280 0 0	1,80,042 0 0	5,392 0 0	.....
31st December 1879	Nabaini	274	9,531 0 0	2,447 0 0	90,103 0 0	91,969 0 0	1,296 0 0	.....
17th January 1880	Patna and Gya	67	.....	13,680 0 0	.....	2,30,278 0 0	2,30,278 0 0	.....
	Total	421	74,858 0 0	1,03,189 0 0	16,04,150 0 0	22,54,052 0 0	6,49,890 0 0	.....



SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, FEBRUARY 18, 1880.

OFFICIAL PAPERS.

Non-Subscribers to the GAZETTE may receive the SUPPLEMENT separately on payment of Six Rupees per annum if delivered in Calcutta, or Twelve Rupees if sent by Post.

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RAILWAY EXTENSIONS IN BENGAL.

GOVERNMENT OF BENGAL.
PUBLIC WORKS DEPARTMENT, RAILWAY BRANCH.

IN May 1877 the control of the State Railways in Bengal was made over to the local Government, which undertook payment of interest on capital expended to the Government of India, the Imperial Government undertaking to provide an annual grant for the construction of extensions to the Railway system:

Three short lines were open to traffic when made over:—

The Tirhoot line, 82 miles in length.

The Nalhati line, 27 $\frac{1}{4}$ miles.

The Calcutta and South-Eastern, 28 miles.

And the Northern Bengal was under construction.

This latter line was partially opened for traffic in August 1877, the lower portion of the line, as well as its connecting branch with the Eastern Bengal Railway, was opened in January 1878; an extension from Julpigoree to Silligoree, sanctioned in November 1877, was opened in November 1878; the branch line to Rungpore was opened in July 1878; and the extension of this branch to the river Teesta, completing the system at present contemplated, was opened in June 1879: the total length of the Northern Bengal Railway being 244 miles.

In February 1878 sanction was given to the construction of the Patna and Gya line. This line, 57 miles in length, was, for the convenience of the public, opened for traffic in June 1879, though in a very unfinished state, and some idea of its financial prospects can be gathered from the fact that, by the end of December, 267,119 passengers and 5,67,288 maunds of goods had been carried over it, the earnings having amounted to Rs. 2,30,278, sufficient, after paying working expenses, to pay at the rate of six per cent per annum on the capital outlay, and this for the first half year after opening.

During the cold season, 1877-78, surveys were made for extensions of the Tirhoot Railway, both east and west, and projects submitted—

- (1) for an extension, 78 miles in length, from Mozufferpore *via* Motiharee and Segowlee to Bettiah, at an estimated cost of Rs. 31,70,325;

- (2) for an extension, 24 miles long, from Durbhunga to the eastward, at an estimated cost of Rs. 12,00,000, or Rs. 50,000 per mile.

This extension is of such importance to a great rice-producing district, at present almost cut off from communication with the great markets of the country, that the Maharajah of Durbhunga, a very large landed proprietor, anxious for its early construction and for its further extension, has expressed his willingness to subscribe two-thirds of the capital on provincial debenture loan for the first portion, and further funds for further extension.

The population of the Tirhoot District, served by these extensions, was shown by the last census to be 691 to the square mile.

The estimates for both these extensions of the Tirhoot system were submitted to the Government of India for sanction in January and February 1879, but no orders have yet been passed.

Projects have also been prepared during 1878 and 1879 for railways to serve the rich and densely populated districts of Central and Eastern Bengal, as well as for extensions into the Assam Valleys:—

- (1)—*A system called the Central Bengal Railway, to serve the Nuddea, Jessore, and 24-Pergunnahs Districts.*

Commencing from Bugwangola on the Ganges, it is taken past the important places of Moorshedabad, Berhampore, Kishnagur, and Santipore to Rana-ghat on the Eastern Bengal Railway, and thence *via* Bongong and Jessore to Kboolnah, with a connection from Bongong *via* Baraset and Dum-Dum to Calcutta, and another from Santipore to Mymaree on the East Indian Railway. This last connection is of very great importance. At present there is no connection between the East Indian Railway and the Eastern Bengal Railway; all traffic therefore proceeding from the eastern districts to the western and northern parts of India, or *vice versa*, has to be taken to Calcutta, and there transhipped; further, a connection between these railways will effect a saving of no less than Rs. 1-8 per ton on all the coal required for working all the railways in East and North Bengal.

The length of this system will be 241 miles, and its estimated cost is Rs. 2,20,00,000, or Rs. 91,286 per mile.

The population of the districts served by this line is 630 to the square mile.

- (2)—*A project for a short line from Sonarpore on the Calcutta and South-Eastern Railway to Diamond Harbour on the Hooghly, 28½ miles in length, at an estimated cost of Rs. 22,10,000, or Rs. 76,870 per mile.*

This line passes through an exceedingly rich rice-producing country, most densely populated, the population according to the last census being 770 to the square mile. Connecting Calcutta also as it will do with the lower reaches of the Hooghly at Diamond Harbour, it will be of considerable convenience to the shipping of the port.

The estimate for this line has been submitted for the sanction of the Government of India.

- (3)—*A project to serve the districts of Dacca and Mymensingh.*

This line, which would be practically an extension of the Eastern Bengal Railway, would serve the important city of Dacca, with its port at Naraingunge, and district of Mymensingh, at present for a great part of the year cut off from communication. It would also assist the trade of Sylhet and Cachar materially.

The length of this line to Dacca and Mymensingh, including the branch to Naraingunge, would be 128 miles, and the estimated cost is for a broad or 5 feet 6 inches gauge line Rs. 1,48,00,000, or Rs. 1,15,625 per mile, and for a metre-gauge line Rs. 1,28,00,000, or Rs. 1,00,000 per mile.

The population of the Dacca district is 640, and of the Mymensingh district 373 to the square mile.

- (4)—*A project for extending the Rungpore Branch of the Northern Bengal Railway to Dhoobree on the Brahmapootra to serve the trade of the Assam Valley.*

This project which, if constructed, would serve mainly the interests of Assam, can scarcely be treated as a Bengal Provincial Railway. The length of

line required is only 54 miles, but as it crosses four very large rivers, the cost of its construction is very heavy, the estimate amounts to Rs. 1,22,26,473, or Rs. 2,26,416 per mile.

Besides these lines, for which surveys have already been made, there is another very important railway required, starting either from Calcutta through Midnapore, or from Burdwan or Ranee-gunge through Bankoora to Chybassa, and thence to Chuteesgurrh, joining the line now under construction to Nagpore in the Central Provinces, with a junction line from Chybassa *via* Ranchee or Dorunda and the Karanpura coal-fields to Chutra and Gya.

This system would be the direct route from Calcutta to Bombay. It would pass through a country rich in mineral wealth and containing some of the finest wheat-producing land in India, though at present only sparsely populated; but the railway giving easy means of access, it would soon attract, under fair terms, some of the redundant population of the Bengal districts.

The administration of the Bengal Railways, hitherto conducted by a Director, who is also Joint-Secretary to the local Government in the Public Works Department, is now to be amalgamated with the General Branch of the Bengal Public Works Department Secretariat, all projects for railway extensions in Bengal being now in abeyance, owing to the financial restrictions, but as indicating the real value of railways in these provinces, I append a table (A) showing the traffic on the Northern Bengal Railway in 1879, as compared with 1878, showing how rapidly the traffic of the country is being attracted to the railway. The increase in the salt traffic is very promising, and I have been informed that salt is now procurable at many village hats where, before the railway was made, no salt at all was sold.

The success of the Patna and Gya line has been mentioned above.

The management of a number of small unconnected lines is of course more costly than that of one line of considerably greater length than all the present open lines taken together; but every endeavour is being made to keep down the working expenses, and as the gross receipts will, for 1879-80, amount to 8 per cent on the capital expended, and in 1880-81 may be expected to reach fully 10 per cent, it will not be long before they pay full interest on the capital expended, while the indirect benefits they confer on the country can scarcely be exaggerated, and it may be hoped that before long the financial pressure may be lifted, and the lines described, which are all required to develop the resources of the province, may be constructed.

F. S. STANTON, *Lieut.-Col., R. E.,*

*Joint-Secy. to the Govt. of Bengal,
P. W. Dept., Railway Branch.*

A.

Comparative Statement showing the gross weight of important staples of Traffic carried over the Northern Bengal State Railway in 1878 and 1879.

YEAR.	Food-stuffs.	Jute.	Piece-goods.	Salt.	Tea.	Tobacco.	All other goods.	Railway materials.	Total, exclusive of railway materials.	Total, inclusive of railway materials.
	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
1878 ...	4,95,322	1,31,690	6,855	2,661	69,010	42,064	1,41,692	4,80,785	6,79,484	13,60,269
1879 ...	6,72,189	5,84,604	1,05,557	1,17,604	87,418	1,38,120	4,51,171	4,80,252	21,51,729	26,31,981
Increase in 1879 ...	1,76,867	4,02,974	98,702	1,14,953	18,408	91,062	3,09,479	.....	12,72,245	12,71,712
or increase per cent	35.6	330.4	1,439.8	4,336.2	26.67	216.46	218.41	.....	144.6	93.49

PASSENGER TRAFFIC.

	1st class.	2nd class.	3rd class.	Total.
1878 ...	1,702	5,246	4,30,081	4,37,029
1879 ...	2,818	6,710	6,86,844	6,46,872
Increase in 1879 ...	1,616	1,464	2,06,763	2,09,343
Increase per cent	94.94	37.91	48.08	47.90

Rainfall, Weather, and State and Prospects of the Crops.

Statement showing Rainfall, Weather, and State and Prospects of the Crops in the different Districts of Bengal, as reported to Government during the week ending the 14th February 1880.

No.	District, and date of return.	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL.			
<i>Western Districts.</i>			
BARDWAN DIV.	1 Bardwan, Feb. 14 '80	1.90	Weather—cool and fair. Good rain general over district. Ploughing commenced everywhere. Collector doubts accuracy of Rancegungo rain return and will verify it.
	Cutwa	1.85	
	Rancegungo	6.70	
	2 Bankoora, „ 14 „	1.07	Weather—warm at beginning of week; latterly cool and fair. Mustard and <i>surgunja</i> being gathered all over district. Rain done good to crops on ground. Some cases of small-pox and cholera in Hishenpore sub-division.
	Biahenpore	0.87	
BARDWAN DIV.	3 Beerbhoom, „ 14 „	1.13	Two thunderstorms have made weather cooler. Rain has set ploughs to work and has benefited everything but pulses. Cholera still prevalent in Rampore Hat.
	4 Midnapore, „ 14 „	A few drops on night of 11th.	Weather—cloudy. State and prospects of crops favorable.
	5 Hooghly, „ 14 „	0.11	Weather—clear and cloudy, with rain on 12th. Winter crops good. Public health good. A few cases of small-pox in thanas Gooptipara, Balagore, and Serampore.
	Howrah, „ 15 „	0.15	Weather—warmer until 14th when rain fell. State and prospects of crops fair. Manufacture of <i>goor</i> begun in places.
<i>Central Districts.</i>			
PRESIDENCY DIV.	6 24-Pergunnahs, Feb. 14 '80	0.09	Hot weather set in. Pulses and peas being gathered. Rain wanted for cultivation of lands for <i>aus</i> crop. Sporadic cases of cholera in Hussurhat. Some cases of fever, said to resemble an epidemic that prevails on Madras seaboard, have occurred in southern suburbs.
	7 Nuddea, „ 14 „	Not given.	Weather—very warm in daytime, and, with exception of one day's rain, fine and clear. Crops doing well.
	Kooshtea	0.12	
	Meherpore	0.28	
	Choondanga	2.13	
PRESIDENCY DIV.	Ranaghat	1.11	Weather—bright, clear, and cool since rain. Rain done much good where fallen, and greatly wanted where none fallen, particularly for sowing of <i>teel</i> . Health good.
	8 Jessore, „ 14 „	0.70	
	Jheudiah	0.51	
	Magoorah	0.54	Weather—seasonable. Prospects of crops good. Both fever and cholera in mitigated form in some thanas of Sudder sub-division. Cholera also broken out in a village in Jungipore sub-division.
	9 Moorshedabad, „ 14 „	1.18	
RAJSHAHY AND COOCH BEHAR DIV.	10 Dinagepore, Feb. 13 '80	0.36	Weather—chilly and cloudy, with rain. Winter rice harvest completed; a good crop secured. Mustard nearly all harvested. Rice 14 to 22 <i>seers</i> .
	11 Rajshahye, „ 14 „	0.37	Weather—unsettled in beginning of week. Wind variable. A storm with slight rain on evening of 9th; moderately heavy rain on night of 11th and morning of 12th; since then bright, clear and cool. <i>Rubbee</i> crops thriving; <i>boro dhan</i> being transplanted; in some places <i>aman</i> rice being sown in low lands. Common rice at Beaulah 15 <i>seers</i> per rupee, in interior 16 to 19½ <i>seers</i> . Eight cases of cholera, and four deaths, in two villages in thana Manda.
	12 Rungpore, „ 13 „	1.3	Weather—cold on account of recent rains. State and prospects of winter crops continue favorable. Public health good.
	13 Bogra, „ 14 „	0.40	Weather—rather cooler since rain on 11th. Crops benefited by rain; ploughing for <i>aus</i> going on.
	14 Pubna, „ 14 „	0.92	Weather—cool. A good shower of rain on night of 11th and morning of 12th. Prospects of spring crops very good. Public health good.
	15 Darjeeling, „ 14 „	0.40	Weather—cloudy; slight rain on three days accompanied with strong wind. No crops of importance on ground. Few <i>rubbee</i> crops in field doing well. Land being cleared for <i>bhadol</i> rice.
	16 Julpigoree, „ 14 „	1.10	Heavy fogs, with west wind and rain. Rain on 10th and 11th beneficial, being just sufficient for wheat, and also assisting cultivation for <i>bhadol</i> .
	Cooch Behar, „ 12 „	0.17	Weather—cloudy and much colder towards end of week. Threatens more rain. Good reports of all crops. Rice Rs. 1-14 to Rs. 2 a maund. Small-pox prevalent.

No.	District and date of return.	Rainfall at Sadler Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL.—(Continued.)			
<i>Eastern Districts.</i>			
Dacca Div.	17 Dacca, Feb. 14 '80	0.40	Weather—cooler than last week. Prospects of winter crops continue favorable, and further improved in parts by recent rain. More rain will be beneficial. Public health good.
	18 Furreedpore, " 14 "	0.47	Weather—cloudy. A copious shower of rain on 12th. Prospects of cold-weather crops very good. Public health good.
	Goalundo " " "	1.15	
	19 Backergunge, " 12 "	Nil	Weather—sultry, with heavy fogs in fore-part of week; cooler now. Prospects of crops satisfactory. Health of men and cattle good.
	20 Mymensingh, " 13 "	0.76	Weather—seasonable. Cold-weather crops excellent.
Chittagong Div.	21 Tipperah, " 13 "	Nil	Weather—fair; gradually becoming warmer. Prospects of <i>kesari</i> , <i>kalai</i> and other minor crops good. <i>Boro dhan</i> on churs thriving.
	22 Chittagong, Feb. 17 '80	Nil	Weather—fair. Prospects of cold-weather crops continue good. Cholera almost abated.
	23 Noakholly, " 12 "	Nil	Weather—somewhat hotter than seasonable. Linseed, red-pepper, pulses, &c., looking very well.
	24 Chittagong Hill Tracts, " 10 "	Nil	Weather—becoming hotter daily. Cutting of jums begun. Mustard being gathered. Tobacco, chillies and other cold-weather crops doing well.
	Hill Tipperah, " 11 "	Nil	Weather—rather hot. Sugarcane being cut and pulses and oilseeds gathered. State and prospects of crops fair. Public health good.
BEHAR.			
Patna Div.	25 Patna, Feb. 14 '80	1.53	Weather—bright, clear and cool. Rain done some harm to gram and other pulses. Rain too late and too heavy; but on the whole done more good than harm.
	Barrh " " "	0.75	
	26 Gya, " 14 "	0.39	Weather—cloudy. Maximum reading in shade 84.5°. Recent showers on the whole done good to <i>rubbee</i> crops. Public health generally good.
	Nowada " " "	0.97	
	Aurangabad " " "	0.20	
	27 Shahabad, " 14 "	0.88	Weather—cloudy, with westerly wind. Rain on the whole done good. <i>Rubbee</i> promises to be excellent.
	28 Durbhunga, " 14 "	1.60	Weather—cloudy occasionally. General rain during week done slight injury to crops in blossom, but on the whole beneficial to <i>rubbee</i> . Prices falling. Public health good.
	29 Mozufferpore, " 14 "	2.33	Weather—cloudy and rainy. <i>Rubbee</i> crops greatly improved by rain. A bumper harvest may be expected if weather continues favorable. Cutting of mustard begun in some places.
	Hajepore " " "	1.69	
	Seetampurhee " " "	0.86	
Bhagalpore Div.	30 Sarun, " 14 "	1.52	Weather—cool and cloudy. Rain in most parts of district will benefit crops and improve outturn of <i>rubbee</i> . Prices stationary. General health good.
	Sewan " " "	1.27	
	31 Champaran, " 14 "	1.67	Weather—rain and clouds for four days with east wind; now bright and cold with west wind. State and prospects of crops very good. Small-pox still prevalent in some places.
	32 Monghyr, Feb. 14 '80	0.74	Weather now clear and cold. No harm done by rain. Moisture will be good for indigo sowings, but more rain would be injurious to standing crops now ripening.
	Begooosera " " "	0.05	
	Jamui " " "	0.22	
	33 Bhagulpore, " 14 "	0.73	Weather—seasonably cold. Cloudy for the first half, and bright during latter half of week. Prospects of <i>rubbee</i> crops improved by rain. General health good.
	34 Purneah, " 14 "	0.53	Weather—wet and cold. Rain benefited <i>rubbee</i> crops. <i>Bhadoi</i> ploughing now in full progress.
	Kiasengunge " " "	1.10	
	Arrareah " " "	1.51	
Bhagalpore Div.	35 Maldah, " 14 "	0.85	Weather—cool, with foggy mornings. A heavy shower of rain on night of 12th, attended with thunder and lightning, did much good to standing crops. Prices of all sorts of food-grains remain unaltered, except wheat, which is selling at 9 seers per rupee. Public health continues good.
	36 Sonthal Pergah, " 14 "	0.31	Weather—cloudy and warm until some rain fell, when temperature got low again. State and prospects of crops good.
	Rajmehal " " "	0.47	

No.	District, and date of return.	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
ORISSA.			
ORISSA DIV.	37 Cuttack, Feb. 14 '80	1.48	Weather—getting warm. <i>Dalua</i> crop progressing well. A shower in town on 13th. Small-pox still prevalent. Common rice 17½ to 21 seers per rupee.
	38 Pooroe, „ 13 „	Nil	Weather—fine, with easterly wind. <i>Sarad</i> still being reaped. <i>Dalua</i> progressing well. Cold-weather crops getting on well. Prices of food-grains stationary. Small-pox still prevails.
	39 Balasore, „ 13 „	Nil	Weather—getting gradually warmer for time of year. Strong fogs in beginning of week. Sky cloudy from last two days. Cold-weather crops continue well. Scattered cases of cholera and small-pox reported from Balasore, Basudebpore, Soro, Baudruck and Dulsahi.
CHOTA NAGPORE.			
<i>South-West Frontier Agency.</i>			
40	Hazareebagh, Feb. 13 '80	0.40	Weather—much cooler after rain; slight rain at Ramghur and Pachumba; nowhere else. <i>Rubbee</i> crops everywhere favorable. Health good. Cattle disease in several places.
41	Lohardugga, „ 14 „	0.95	Weather—occasional showers during week; now again bright and clear. Rain done much good. Ploughing going on vigorously. Prices stationary.
42	Singbhoom, „ 13 „	Nil	Weather—warm and cloudy. Very little crops now on ground. General health good.
43	Manbhoom, „ 14 „	1.68	Heavy storms of rain during week have made weather again cooler. Prospects of <i>rubbee</i> crops good. Public health generally good.

Published for general information.

CALCUTTA, STATISTICAL DEPT.,
The 17th February 1880.

A. MACKENZIE,
Secy. to the Govt. of Bengal.

Table of Rainfall recorded at Stations in Bengal in January 1880.

Divisions.	Stations.	First week.							Second week.							Third week.							Fourth week.							Total rainfall of the week.			Total rainfall of the month.	Heaviest rainfall during the month.	Total rainfall from 1st January to date.	Average rainfall from 1st January to date.			
		Total rainfall of the week.							Total rainfall of the week.							Total rainfall of the week.							Total rainfall of the week.							Total rainfall of the week.									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					Last three days.		
BENGAL.	Burdwan District.																																						
	Burdwan			0.01																															0.01	0.13	0.13	0.21	0.28
	Cuttack																																		0.03	0.23	0.24	0.41	0.64
	Cuttack																																		0.03	0.23	0.24	0.41	0.64
	Bansgaunge																																		0.13	0.13	0.13	0.43	0.43
	Bankura District.																																						
	Bankura																																		0.22	0.15	0.23	0.37	0.37
	Bishnupore																																		0.15	0.45	0.45	0.85	0.85
	Berhampur District.																																						
	Berhampur																																		0.21	0.21	0.21	0.91	0.91
Koyajore																																		0.21	0.21	0.21	0.91	0.91	
Rampore Hat				0.10																														0.21	0.21	0.21	0.91	0.91	
Midnapore District.																																							
Midnapore																																		0.21	0.21	0.21	0.91	0.91	
Tamluk																																		0.21	0.21	0.21	0.91	0.91	
Gustaf																																		0.21	0.21	0.21	0.91	0.91	
Central																																		0.21	0.21	0.21	0.91	0.91	
Hooghly District.																																							
Hooghly																																		0.21	0.21	0.21	0.91	0.91	
Srirampore																																		0.21	0.21	0.21	0.91	0.91	
Jelambad																																		0.21	0.21	0.21	0.91	0.91	
Howrah District.																																							
Howrah																																		0.21	0.21	0.21	0.91	0.91	
Mohachyra																																		0.21	0.21	0.21	0.91	0.91	
24-Parganahs.																																							
Saugor Island																																		0.21	0.21	0.21	0.91	0.91	
Alipore																																		0.21	0.21	0.21	0.91	0.91	
Budkerhat																																		0.21	0.21	0.21	0.91	0.91	
Barnack																																		0.21	0.21	0.21	0.91	0.91	
Damanad Harbour																																		0.21	0.21	0.21	0.91	0.91	
Barrapore																																		0.21	0.21	0.21	0.91	0.91	
Saltbire																																		0.21	0.21	0.21	0.91	0.91	
Barnackpore																																		0.21	0.21	0.21	0.91	0.91	
Dum-Dum																																		0.21	0.21	0.21	0.91	0.91	
Madras District.																																							
Kidnagar																																		0.21	0.21	0.21	0.91	0.91	
Bagong																																		0.21	0.21	0.21	0.91	0.91	
Meerapore																																		0.21	0.21	0.21	0.91	0.91	
Chendragu																																		0.21	0.21	0.21	0.91	0.91	
Koathia																																		0.21	0.21	0.21	0.91	0.91	
Kanghal																																		0.21	0.21	0.21	0.91	0.91	

Table of Rainfall recorded at Stations in Bengal in January 1980—continued.

[illegible]

Jalisco District.		
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Not received 1916 to 31st January 1930.

100

Figure 1. The effect of the concentration of the polymer solution on the surface energy of the polymer film. The concentration of the polymer solution was 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, and 1.0 g/dL. The surface energy of the polymer film was measured by the contact angle method. The surface energy of the polymer film was 21.5, 21.8, 22.1, 22.4, 22.7, 23.0, 23.3, 23.6, 23.9, and 24.2 mJ/m² for the concentrations of 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, and 1.0 g/dL, respectively.

Results of the Meteorological Observations taken at the Alipore Observatory from 8th to 14th February 1880.

Month.	Date.	Maximum in sun.	Mean pressure barometer at 32° Fah.	TEMPERATURE.				HYGROMETRY.				Prevailing direction.	Miles recorded.	Rain.	WEATHER.
				Mean.	Maximum.	Range.	Minimum.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.				
1880.		☉	Inches	—	☉	☉	☉	☉	Inches	☉	%.			Inches	
Feb.	8th	139.0	29.908	72.5	83.7	10.2	64.5	66.7	0.551	63.2	75	Till 6 A.M. S W, till 8.30 A.M. S S W, till noon N E through S and E, till 1.30 P.M. S S E through E and S E, till 7 P.M. W by S through E and N, till mid. night S S W.	64	Nil	Morning cloudy, rest clear, o, g, f, w, &
"	9th	141.5	957	74.0	84.0	10.0	68.7	70.8	700	68.6	82	Chiefly S S W.	77	...	Day cloudy, night clear, o.
"	10th	142.2	964	73.6	81.0	18.1	60.5	65.6	525	60.2	65	Till 1 A.M. S S W, till 8 A.M. N through W and N W, till 9.45 P.M. E S E through N E and E, till midnight S through S E.	163	...	Clear.
"	11th	137.7	919	71.0	82.5	10.4	63.1	65.8	558	62.1	72	Till 7 A.M. S, till 11.30 P.M. E S E through W, N and E, till midnight chiefly S S W.	114	...	Morning clear, rest cloudy, l.
"	12th	145.5	905	70.7	82.0	17.2	64.8	65.8	571	62.7	77	Till 2.45 A.M. S S W, till 9.30 A.M. N E by N through S and E, till 6 P.M. S E by E through E, till midnight N N E through N and E.	126	0.03	Cloudy, o, g, p.
"	13th	140.5	917	70.7	70.2	14.7	64.5	65.8	571	62.7	77	Till 7 A.M. N E, till 5 A.M. W through N and N W, till 11.30 A.M. N N E through N W and W, till midnight E S E.	77	0.10*	Day cloudy, night clear, o, g, p.
"	14th	137.0	914	70.2	80.5	10.8	60.7	64.5	534	60.8	74	Till 9.30 A.M. E N E, till noon N E by N, till 8 A.M. W by S through and N W, till midnight N by W	68	Nil	Chiefly clear, f & w.

* Fell since 7.30 P.M. of the 12th.

The mean pressure of the seven days	...	Inches.	29.985
The average pressure of the corresponding period for 24 years, S. G. Office	...	...	29.956
The mean temperature of the seven days	...	...	72.1
The average temperature of the corresponding period for 24 years, S. G. Office	...	...	71.8
The extreme variation of temperature during the seven days	...	...	23.9
The maximum temperature during the seven days	...	...	84.6

The mean relative humidity during the seven days	...	%.	75
The average relative humidity of the corresponding period for 24 years, S. G. Office	...	...	70

The total fall of rain from 8th to 14th February 1880	...	Inches.	0.18
The average fall of the corresponding period for 24 years, S. G. Office	...	...	0.37
The total fall from 1st January to 14th February 1880	...	...	0.18
The average fall of the corresponding period for 24 years, S. G. Office	...	...	1.02

The mean pressure, temperature, &c., are deduced from the traces of the barograph and thermograph. The maximum and minimum temperatures are obtained from self-registering thermometers. All the thermometers are verified, and the readings have been corrected to a standard constructed and verified at the Kew Observatory. They are exposed under a thatched shed open at the sides, and are suspended four feet above the ground.

The barometer readings are corrected approximately to those of the standard Newman's No. 86, formerly at the Surveyor-General's Office.

The hygrometric elements are obtained from Tables III, IV, and V of the official tables computed in the Meteorological Office, and based on Regnault's modifications of August's formula.

The direction and movement of the wind are taken from the trace of a Beckley's anemograph.

The mouth of the rain-gauge is one foot above the ground.

o overcast, g gloomy, f fog, w dew, & dust whirl, l lightning, p passing showers.

METEOROLOGICAL OFFICE, INDIA,
The 17th February 1880.

HENRY F. BLANFORD,
Meteorological Reporter to the Government of India.

Report of Fluctuation of Traffic on the East Indian Railway from 30th November to 31st December 1879.

EAST INDIAN RAILWAY. TRAFFIC MANAGER'S OFFICE, JAMALPORE, THE 4TH FEBRUARY 1880.

Remarks on Traffic of East Indian Railway from 30th November to 31st December 1879.

THE approximate figures for the period are as follow :—

	Coaching.		Goods.		Total.
	No.	Rs.	Mds.	Rs.	Rs.
1879	507,491	8,00,256	60,42,298	24,60,003	37,57,120
1878	538,602	8,89,974	67,37,686	24,80,505	34,59,539
Increase	31,111	89,718	6,95,386	2,91,333	2,98,000
Decrease					

The falling off in weight carried is chiefly due to "grain;" in millets alone the difference is over 20,000 tons.
The principal staples in which increases and decreases are shown are—

Increases.		
Coal.	Hides.	Railway materials, Foreign.
Government stores.	Piece-goods.	Salt and saltpetre.
Decreases.		
Beer, Commissariat.	Iron.	Opium.
Indigo.	Jaggery.	Grain and gunny.

I will now remark on the causes of the fluctuations shown —

	Mds.	Rs.
Coal, Up	1,85,070	1,28,459
" Down	1,16,767	16,270
Total	3,01,837	1,44,729

We are now despatching largely to the different Railway Companies in the north, and to the Oudh and Rohilkund, and the public traffic is also steadily increasing.

Government stores ... Mds. 24,505 Rs. 11,514
This is owing to consignments of carts and bullocks from Bankipore, and wheat and barley from Allyghur to Jueelum, for the Commissariat Department.

Hides ... Mds. 52,543 Rs. 36,806
There has been an active business in the Calcutta market for hides for export to England and America, and we have carried increased despatches from Delhi and other stations downwards.

Piece-goods ... Mds. 16,448 Rs. 30,430

I have little to add to what was said last month with regard to piece-goods.

Railway materials, Foreign ... Mds. 33,448 Rs. 1,33,659

This is an exceptional traffic, caused by the despatch of the surplus railway materials of this line to Sukkur for the Sukkur-Quetta line.

Salt ... Mds. 1,16,897 Rs. 34,870

As anticipated in my last report, the demand for this article of consumption has not been long in abeyance.

The demand during the half-year has been unusually brisk and compares favorably with 1878 and 1877, the figures for the half-years ending 31st December being—

	Weight carried.		Earnings.
	Tons.	Rs.	
1877	70,000	5,68,300	
1878	75,000	5,63,500	
1879	82,700	6,25,800	
Saltpetre	Mds. 41,418	Rs. 15,591	

The demand was more active at the end of the month, and most of the stuff was carried to Howrah.

Beer, Commissariat ... Mds. 23,852 Rs. 46,441

As I have already explained, we may consider our earnings from this source as permanently reduced to a large degree since the introduction of country-brewed beer.

Indigo ... Mds. 12,267 Rs. 16,630

Although Calcutta prices are higher than they were last year, the outcome of last season's crop is much smaller, owing to unfavorable weather, and as we carry nearly all the indigo intended for export, the freight earned on this article must on the whole be less.

Iron ... Mds. 12,202 Rs. 7,316

Last year there was a demand for iron for the use of the Roorkee Workshops, but this year little or none, and the market generally has been depressed. I do not anticipate that this is anything more than ordinary fluctuation.

Jaggery ... Mds. 1,14,108 Rs. 20,547

Last year there was an unusually large demand in the Bombay Presidency.

Opium ... Mds. 6,993 Rs. 7,978

This is probably owing to the stoppage of despatches during the Christmas holidays.

Grain—

The grain traffic results are as follow :—

Increases.		
Barley	Mds. 16,060	Rs. 2,034
Wheat	Mds. 1,00,740	Rs. 43,486
Total	Mds. 1,16,800	Rs. 45,520
Decreases.		
Rice	Mds. 97,067	Rs. 65,733
Other grain	Mds. 6,03,103	Rs. 1,10,817
Pulses	Mds. 1,62,066	Rs. 39,197
Total	Mds. 8,62,236	Rs. 2,15,747
Net decrease	Mds. 7,45,436	Rs. 1,69,227

The increase in wheat is due to better demand in Calcutta and Bombay for exportation.

Rice—

The crops are large, but the demand is limited, and a decrease may be expected.

Other Grain—

The demand in Bombay and Guzerat and the Western Presidency, which has operated so largely in previous years in drawing off the surplus stocks of food-grains from the North-West and Oudh, does not now exist, and it is of course to be expected that our revenue from this source must be considerably reduced.

In pulses also there is little demand, and this traffic may be said to have fallen to its normal state.

Gunny ... Mds. 42,038 Rs. 39,284
For this production there is no demand there not being any large movement of grain.

Seeds ... Mds. 95,128 Rs. 6,027

The falling off in weight is principally attributable to Patna, while the increase in earnings is owing to the longer lead of the seed despatched from the North-West.

The train mileage for the period has been—

	Coaching.	Goods.	Total.
1879	2,12,679	4,34,833	6,47,512
1878	2,11,544	4,40,280	6,51,824
Increase	1,028	5,447	6,419
Decrease			

Earnings per train mile calculated on actual earnings—

	Coaching.	Goods.	Total.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
1879	4 3 6	6 13 5	6 4 11
1878	4 3 3	6 13 5	6 4 11
Increase	0 0 3	0 6 5	0 3 7
Decrease			

Jubbulpore line traffic—

	Coaching.	Goods.	Total.
	No.	Mds.	Rs.
1879	27,077	7,47,755	2,42,577
1878	27,354	7,43,990	2,42,507
Increase	2,277	7,10,241	1,50,290
Decrease			

Fewer extra troop trains this year will account for the decrease in coaching and grain and seeds in the goods traffic.

Train mileage for the period is—

	Coaching.	Goods.	Total.
1879	23,028	41,491	64,519
1878	25,943	95,220	1,21,163
Increase			
Decrease	2,015	53,735	55,750

Earnings per train mile—Total increase, annas 11-9.

W. S. L. CARTER, Traffic Manager.

MAIN LINE.

Statement showing the Totals and Increases and Decreases of Staples during four weeks and four days ending 31st December 1879.

STAPLES.	WEIGHT.		AMOUNT.		1879.			
	1878.	1879.	1878.	1879.	Increase.	Decrease.		
	Mds.	Mds.	Rs.	Rs.	Mds.	Rs.	Mds.	Rs.
Beer, Commissariat	29,031	2,779	47,352	911			23,852	66,441
" not Commissariat	2,001	2,001	2,001	2,001			979	1,237
Belt-bait and leaves	1,000	10,000	15,000	21,811	8,206	6,436	79	739
Bonds and shoes	2,000	2,000	4,786	4,057				
Brass and brassware	12,548	10,000	1,000	11,700	1,000	907	10	844
Bricks	9,000	9,000	2,000	2,000				
Coal, up	3,70,114	3,61,184	1,00,000	2,00,000	1,00,000	1,00,000		
" down	12,04,378	14,11,440	1,75,000	1,94,800	1,16,500	16,370		
Copper and copperware	8,014	1,000	12,000	14,000	1,000	1,000		
Cotton	1,32,210	1,61,875	2,00,000	2,00,000	19,667	2,441		
" twist	9,428	9,428	10,000	10,000			151	
Drumsticks	5,000	5,000	5,000	5,000			9	1,328
Elephant goupils	4,707	10,000	1,000	1,000	5,507		1,143	436
Firewood	20,000	20,000	20,000	27,000	1,000			17
Fruits	3,177	3,177	3,000	4,000	2,337	925		900
Glass and glassware	30,451	20,000	20,000	20,000	3,000	4,134		
G. F. T. materials	4,001	4,000	10,100	12,000	800	1,872		
Government Commissariat stores	21,802	42,000	20,000	30,100	24,505	10,524		
" Ordnance stores	11,000	11,000	24,400	21,000	905			2,001
" Harley	3,151	2,000	2,000	4,000	15,000	2,004		
" Onks	7,000	7,000	1,77,000	1,21,000			97,007	55,783
GRAIN, EDIBLE. & PULSES.	78,251	1,78,001	38,000	77,100	1,00,740	43,400		
" Rice	8,00,000	2,00,000	1,00,000	22,000			6,00,102	1,10,217
" Wheat	8,00,000	2,00,000	1,00,000	22,000			1,00,000	30,107
" Other grains	1,00,000	1,00,000	1,00,000	1,00,000			62,000	20,204
" Pulses of all kinds	1,00,000	1,00,000	1,00,000	1,00,000				
Gunny bags	83,017	1,00,000	1,00,000	1,00,000	16,402	80,900		
Hops and horns	71,707	71,707	1,10,000	99,000			12,207	10,000
Indigo	1,02,000	99,000	99,000	70,000			12,200	7,318
Iron	2,45,000	1,01,000	5,000	53,702			1,14,100	20,547
Jaggies	18,042	24,100	11,000	15,000	5,000	3,016		1,013
Lae	30,004	12,000	4,000	5,000			8,100	
Minerals	8,000	17,000	7,000	8,000	13,000	3,016		400
Mowah flower	7,000	10,000	2,000	1,000	8,014		0,000	7,000
Oilcake	08,002	61,000	75,000	05,000			200	212
Opium	6,327	6,327	8,107	7,000				
Paper	1,33,002	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000		
Passenger goods	10,000	30,000	4,000	5,000				
Railway materials, construction account	70,103	1,00,000	40,000	1,74,000	1,33,000	80,000		
" foreign	31,700	20,000	17,000	16,000			8,000	1,000
Roots	4,22,200	5,00,000	1,00,000	1,00,000	1,00,000	1,00,000		
Salt	60,004	1,00,000	27,000	45,000	41,000	15,000		
Saltpetre	5,42,300	4,47,178	1,07,000	1,00,000			90,120	400
Seeds	1,471	1,471	1,000	1,000			124	
Spelter	0,001	7,400	0,000	10,000			1,001	
Spices	7,312	12,000	5,000	7,000			1,300	
Stones	47,000	50,000	14,000	10,715			17,230	3,445
Sugar	00,000	00,000	23,100	20,000			1,000	2,700
Tea	6,100	2,000	11,000	4,000			2,000	6,800
Timber	21,537	21,500	0,000	0,000			0,000	250
Tobacco	61,414	20,000	20,000	20,000			0,000	5,713
Turner's	8,000	8,000	8,000	8,000			68	1,001
Waxes	0,000	0,000	10,100	0,000			1,010	
Miscellaneous	1,02,004	1,02,170	1,71,700	1,01,700	9,511	9,001		
Total	64,32,546	60,19,170	25,40,100	20,04,100	7,00,432	4,07,070	12,00,701	3,52,013

Weekly Return of Traffic Receipts on Indian Railways.

EAST INDIAN RAILWAY.

Approximate Return of Traffic for week ended 7th February 1880 on 1,567½ miles open.

	COACHING TRAFFIC.				MERCHANDISE AND MINERAL TRAFFIC.				TOTAL TRAFFIC RECEIPTS.			TRAIN MILES RUN.		
	No. of passengers.	Coaching receipts.		Mds. s.	Weight carried.		Receipts.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Coaching.	Merchandise.	Total.
		Rs. A. P.	£ s. d.		£ s. d.	£ s. d.								
Total traffic for the week ...	160,592	2,58,363 11 0	23,682 6 9	16,04,964 10	6,55,967 0 0	60,138 6 2	9,11,330 11 0	52,567 1	105,995 1	158,562 1				
Or per mile of railway ...		171 6 7	15 14 8				585 3 4	39 17 15	586 9 11					
For previous 4 weeks of half-year ...	659,313	11,57,823 15 3	106,133 17 8	69,07,494 0	28,14,539 13	0 360,194 13 2	30,56,354 12 3	211,044 1	469,514 1	709,558 1				
Total for 5 weeks ...	819,705	14,16,147 10 3	120,817 1 0	84,12,487 10	34,94,407 13	0 320,328 10 4	40,10,685 7 3	266,592 1	77,477 3	844,164 1				
COMPARISON.														
Total for corresponding week of previous year ...	161,414	2,30,905 7 7	21,162 6 8	16,22,721 0	6,68,390 14 3	61,269 3 4	8,99,236 5 10	51,502 1	134,106 1	185,608 1				
Per mile of railway, corresponding week of previous year ...		153 3 2	14 0 10				545 7 2	40 13 0	546 10 4					
Total to corresponding date of previous year ...	670,379	13,96,328 5 3	119,747 9 11	80,11,529 30	33,59,888 13	7 925,404 2 10	18,57,225 2 10	291,261 1	688,619 1	982,885 1				

EASTERN BENGAL RAILWAY.

Approximate Return of Traffic for week ended 7th February 1880 on 171½ miles open.

	COACHING TRAFFIC.				MERCHANDISE AND MINERAL TRAFFIC.				Total receipts.	
	Number of passengers.	Coaching receipts.		Weight carried	Receipts					
		Rs. A. P.	£ s. d.		Mds. s.	Rs. A. P.		£ s. d.		
										£ s. d.
Total traffic for the week	30,604	56,015	0 0	5,217 4 2	2,90,173	0	44,981	0 0	4,093 15 2	9,412 10 4
Or per mile of railway	232	331	0 2	30 7 0	631 12		260 2 5		23 17 0	54 4 6
For previous 4 weeks of half-year	122,612	1,60,578	0 0	14,719 13 0	1,77,822	0 0	16,300 7 0		16,300 7 0	31,020 0 0
Total for 5 weeks	219,476	2,17,403	0 0	19,936 17 2	12,700	0	20,390	2 2	20,390 2 2	40,132 0 4
COMPARISON.										
Total for corresponding week of previous year	49,894	49,474	14 9	3,710 4 0	1,70,077	8	32,877	14 0	3,013 10 2	6,724 0 2
Per mile of railway, corresponding week of previous year	276	254	15 4	23 7 5	1,090	10	207	1 8	18 19 8	42 7 1
Total to corresponding date of previous year	222,982	1,82,178	0 3	16,690 14 0	9,53,838	18	1,67,828	5 3	15,384 5 4	52,083 10 4

BENGAL PROVINCIAL RAILWAYS.

Weekly Statement of Traffic Receipts.

Latest return received	Name of Railway.	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1ST JANUARY		Total increase in 1880.	Total decrease in 1880.
			First 11 days of January 1879.	First 10 days of January 1880.	To 11th January 1879.	To 10th January 1880.		
			Miles. Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.		
10th January 1880.	Northern Bengal	230	22,760 0 0	38,088 0 0	22,760 0 0	38,088 0 0	15,328 0 0	1,137
24th ditto	Termet	82	13,160 0 0	11,936 0 0	13,160 0 0	11,936 0 0		439
31st ditto	Calcutta and South-Eastern	28	3,015 0 0	3,482 0 0	3,015 0 0	3,482 0 0		18
10th ditto	Silbati	27½	2,655 0 0	2,437 0 0	2,655 0 0	2,437 0 0		
24th ditto	Patna and Gya	57		13,237 0 0		13,237 0 0	16,247 0 0	
	Total	424½	42,329 0 0	69,200 0 0	42,329 0 0	69,200 0 0	28,575 0 0	1,704



SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, FEBRUARY 25, 1880.

OFFICIAL PAPERS.

Non-Subscribers to the GAZETTE may receive the SUPPLEMENT separately on payment of Six Rupees per annum if delivered in Calcutta, or Twelve Rupees if sent by Post.

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CALCUTTA HOSPITAL REFORMS.

MEDICAL & MUNICIPAL DEPARTMENT.—MEDICAL.

Calcutta, the 24th February 1880.

RESOLUTION.

READ—

A letter dated Brighton, the 19th November 1879, from Dr. J. Ewart, late Surgeon-Superintendent of the Presidency General Hospital, containing his remarks on the report of the Committee on Medical Expenditure in Bengal, with reference to the excessive expenditure in the General Hospital.

Read also—

A letter dated London, the 15th December 1879, from Dr. Norman Chevers, late Principal of the Medical College, Calcutta, submitting remarks on the report of the Committee referred to above, with special reference to the excessive expenditure in the Medical College Hospital.

Read also—

A letter No. 661, dated the 9th February 1880, from the Officiating Surgeon-General, Bengal, forwarding with his remarks the opinions of the medical officers of the hospitals at the Presidency and of the Honorary Secretary, Hospital Nurses' Institution, on the revised dietary scale.

The attention of the Lieutenant-Governor was first drawn to the extravagant expenditure in the medical institutions of Calcutta when reviewing the report on those institutions for 1876. It appeared, on a comparison of the figures of a series of years, that the expenditure had ceased to bear any proper ratio to the numbers of patients treated, and that the charges had been increasing irregularly and abnormally even at times when the number of sick

diminished. This feature was particularly marked in the item of European medicines; and the hospitals, the administration of which was specially obnoxious to criticism in this respect, were the Sealdah and General Hospitals. The case of Sealdah was separately and carefully dealt with and need not be here further referred to. A Committee, consisting of Dr. Cockburn, then Deputy Surgeon-General, Dr. Elliot, Surgeon-Superintendent of the Hospital, and Dr. French, the Civil Surgeon of the 24-Pergunnahs, was appointed to enquire into the expenditure on medicines in the General Hospital since 1870, and into the necessity for maintaining the out-door dispensary at that hospital, which had, as reported by the Surgeon-General Dr. Beatson, been opened by Dr. Ewart, the Surgeon-Superintendent, without any authority from Government. The report of this Committee brought out clearly enough the anomalies in expenditure already detected, but gave no sort of explanation of them, while the Surgeon-General in submitting it was only able to suggest that the excess cost possibly might be caused by the out-door dispensary having been opened long before it was officially admitted to have been started. There was, however, really no ground for thus assuming that the statistics and reports of the hospital had been designedly falsified, and the anomalies in expenditure were in any case not confined to the charges of the out-patient department.

2. Further and closer scrutiny of the medical reports having by this time raised grave doubts as to the character of the supervision and check upon expenditure exercised throughout the medical institutions of Calcutta, the Lieutenant-Governor decided to refer the whole question to a Committee, composed not merely of the principal medical officers of the institutions under examination, but of three other medical officers of recognized standing and ability, with whom were associated the Accountant-General, Bengal, and the Under-Secretary to Government. A distinguished judicial officer, possessing statistical talent of a very high order, was appointed President of the Committee. This Committee was directed to institute the most full and searching enquiry into the administration of each hospital and dispensary in Calcutta and the suburbs during the past ten years, and to draw up thereafter a general scheme for the management of those institutions on a uniform system.

3. Shortly before the appointment of this Committee in February 1878, a copy of a letter dated the 17th December 1877, addressed to Sir J. Fayrer by Dr. Ewart, the late Surgeon-Superintendent of the General Hospital, was received demi-officially by this Government, in which Dr. Ewart, then in England, stated that he had heard from Dr. Elliot of the appointment of the first Committee on the General Hospital expenditure, and of the comments of Government on the excessive expenditure on European medicines. Dr. Ewart attributed this increase in expenditure to the increase in the number of surgical cases, to the amalgamation with the General Hospital of the Sumbhunath Pundit's Hospital, and to the opening of the out-door dispensary. As regards this last, he contended that, even if not regularly sanctioned, it was opened with the full knowledge of Government. Generally he urged that any abnormal expenditure incurred by him would be found to be partly due to increased prices, and was in any case approved and stimulated by the orders of the late Lieutenant-Governor, Sir Richard Temple, copies of whose remarks when visiting the hospital had been preserved by Dr. Ewart, and were forwarded by him to Sir J. Fayrer. Dr. Ewart made no communication to this Government, or to the Medical Department direct. But in appointing the Special Committee of Enquiry, the Lieutenant-Governor remarked, with reference to Dr. Ewart's letter of the 17th December to Sir J. Fayrer—"Nothing that has yet come to light has shown that any encouragement was held out to the Superintendent (Dr. Ewart) in the matter of an excessive expenditure of European medicines; nor is it possible to conceive how any encouragement, had such been given, could justify the administrative head of a great institution in more than doubling the average expenditure on European medicines in the course of three years. Dr. Ewart claims to have shaped his administration generally on certain orders recorded by Sir Richard Temple in September 1875; but those orders had no reference whatever to the subject of medicines, and they were issued after the expiry of the period during which the circumstances, which in Mr. Eden's opinion require investigation, occurred. The Lieutenant-Governor has no intention of pre-judging the case, but he considers the figures above quoted are such as to

call for careful examination with the view as much of rectification in the future as of explanation in the past."

4. The Committee, after a most careful and patient enquiry, submitted its report, and the Lieutenant-Governor reviewed this in a resolution dated the 25th January 1879. Paragraph 2 of that resolution was as follows:—

The primary object of the Lieutenant-Governor in instituting this enquiry was to put an end to the confusion and waste which appeared to have crept into the administration of some hospitals, and to introduce an economical and uniform system of management. Some of the facts which have come to light will require explanation. But the Lieutenant-Governor is not now immediately concerned with the apportionment of praise or censure. Such cases will be dealt with separately and on their own merits; and while the Lieutenant-Governor cannot permit any medical officer convicted of unpardonable carelessness and neglect of duty to resume or continue the management of a hospital, no such officer will be condemned until he has had an opportunity of furnishing an explanation of the charges brought against him. The Committee's remarks allude in many places to a state of things which existed under Superintendents of hospitals now no longer in India. In dealing with the Committee's report therefore, Sir Ashley Eden will for the present avoid the mention of the name of any officer in any way responsible for a state of things which he may consider it his duty to condemn. Whatever explanations may be forthcoming, the facts stated in the Committee's report cannot be gainsayed. The object now in view is the establishment of a uniform system of hospital management, which will provide for the greatest economy consistent with full regard for the care of the sick, the elimination of vicious principles of administration, the selection of the methods found by experience to offer the best results, and the distinct apportionment of the duties and responsibilities of the different classes of officers. It should be stated at the outset that it is the desire of Government not that less than they require should reach the sick, but that the public money should not, under the pretext of their needs, be wasted by the acts of dishonest or careless and inefficient subordinates. Fixed and uniform principles are required for the protection at once of the suffering poor and of the public funds.

The Lieutenant-Governor accordingly in the remaining paragraphs of the resolution proceeded to pass orders on the recommendations of the Committee regarding the future management of the Calcutta hospitals, referring incidentally, in explanation of the orders given, to the undoubted facts and figures established by the Committee's enquiries, but carefully abstaining from specifically censuring or even naming any officer who had not had any opportunity of submitting explanations in respect of points in which his administration was impugned.

5. A copy of the report and of the Government resolution was then forwarded to Dr. Ewart, late Surgeon-Superintendent of the General Hospital, to Dr. Chevers, late Principal of the Medical College Hospital, and to Dr. D. B. Smith, who acted for Dr. Chevers during some of the years covered by the Committee's report, with an invitation to submit any remarks that they might desire to make in connection with the report. Drs. Ewart and Chevers being no longer in the service of this Government, it was not open to the Lieutenant-Governor to call upon them in any more formal manner for explanation. Dr. Smith, who is now Principal of the Medical College, submitted his explanation on the 29th May last, in a letter the tone and temper of which were quite unexceptionable, and which received from the Lieutenant-Governor the consideration which it merited. The following extracts from the Government orders upon it may here be cited:—

Dr. Smith has in reply submitted a full and carefully drawn up explanation on the various points referred to by the Committee, with reference to which I am desired to communicate the following observations and orders.

In his preliminary remarks Dr. Smith refers to his own previous services, and to the acknowledgments of them made on several occasions by Government. In commenting on the unnecessary expenditure which has in some cases characterised the administration of the hospitals at the Presidency, the Lieutenant-Governor has never for a moment called in question the praiseworthy devotion with which the officers attached to these institutions have discharged their onerous professional labours. The Lieutenant-Governor fully appreciates their efforts to advance the cause of medical science, and to do all that science and skill can dictate to alleviate the sufferings of the sick under their charge. What the Lieutenant-Governor has had to complain of, and what the result of the enquiries of the Medical Committee has proved to be the case, is that these large medical institutions were not managed as economically as they should have been, and that there was a want of effective administrative supervision to prevent waste and profusion, which added enormously to the Government expenditure, without in many cases benefiting the patients.

The Lieutenant-Governor desires me to take this opportunity of repeating what has been more than once stated, that his desire is solely to prevent wasteful and unnecessary expenditure, and not to put any restraint on the responsible medical officers in respect to ordering whatever they may consider requisite for the reasonable requirements of the sick. Dr. Smith, the Lieutenant-Governor is glad to observe, fully understands that this is the

view on which Government has acted, and he says that the principle has been carefully and strictly enforced, "that the economy contemplated is to be exercised against waste, and not against any reasonable requirements of the sick."

The remarks submitted by Dr. Smith in paragraphs 12 to 17 of his letter appear very fully to establish the ground taken by the Lieutenant-Governor, to the effect that the expenditure had been conducted on a wasteful and lavish scale. The mere fact for which Dr. Smith takes credit, that in one year alone the savings on the estimates under only two

† 1878		Rs.	A.	P.	heads of expenditure†
Saving under European diets	...	7,692	6	7	more than Rs. 11,000, is a sufficiently clear proof
Do. under clothing, bedding, &c.	...	3,720	14	6	of the wasteful scale on which the annual esti-
Total	...	11,368	4	1	mates were prepared and passed. The Lieute-

nant-Governor holds that, with estimates prepared on such a scale, economical administration could not be expected.

The Lieutenant-Governor does not think it necessary to follow Dr. Smith in the remarks submitted by him under each head of expenditure, or to enter on any further discussion on the past administration of the Medical College Hospital. Dr. Smith admits that there was laxity in the system under which the medicines were administered, and that the dietary system of the hospital was so cumbrous and faulty that he had himself brought its imperfections prominently to the notice of his successor.

The Lieutenant-Governor accepts the assurance given in the report that the orders conveyed in the resolution of 25th January 1879 are being carefully and strictly enforced; and it will be sufficient therefore to confine the remarks in this letter to those parts of Dr. Smith's report which require any orders from Government.

6. The Government has since received letters from Dr. Ewart (dated the 19th November), and from Dr. Chevers (dated the 15th December), in which those officers endeavour to meet the case presented in the report of the Committee. The Lieutenant-Governor regrets to have to observe that the spirit in which they have dealt with the subject is one which contrasts very unfavorably with the carefully supported and temperately worded statements and arguments of the Committee. Dr. Ewart especially has not hesitated to impute motives to the Government, and to the Members of the Committee, for which there is not the slightest justification. It is not a sufficient answer to undeniable figures and facts to charge the Committee, composed largely of officers of established reputation and holding high positions under Government, with ignorance or one-sidedness, to impugn its good faith and common honesty, and to deny the existence of circumstances of which its members had conclusive demonstration on the spot. A case which depends on support of this kind is obviously a very bad one.

7. The *resumé* above given of the correspondence sufficiently meets the complaint made by Dr. Ewart that the Government had already judged him without giving him a hearing. The Government had passed no judgment on the question of Dr. Ewart's personal responsibility for any mal-administration of the General Hospital. The facts which constituted such strong evidence of laxity of administration are not in themselves matters of argument or judgment; they are simply *as facts* incontrovertible. It is only now that the Lieutenant-Governor is in a position to consider how far the officers in charge were to blame for their existence.

8. Dr. Ewart's defence of his administration in the General Hospital consists mainly of reiterated assertions that the scale of expenditure now accepted by Government on the recommendation of the Committee is absolutely insufficient to secure proper diet and treatment for the sick, and that the former outlay was necessary to secure what was required in an institution like the General Hospital of Calcutta. Dr. Chevers' letter embodies very much the same statement, supplemented in his case by the further plea that it was not open to him, as Principal of the Medical College, to interfere materially with the discretion of his colleagues, the other physicians and surgeons of the College Hospital. The best answer to an *a priori* argument of this kind will be found in the facts of actual experience. The reduced diet scales have now been in force in both hospitals for nearly two years. The returns and reports for 1878 were reviewed in the Government resolution of the 11th July last. It was then shown that, with an expenditure on diet considerably below the scale actually now sanctioned by Government, but with increased personal attention to details on the part of the responsible officers, the results of treatment were far more favorable than they ever were under the old system of a high diet scale with lax hospital administration. The returns for 1879 have not yet been received in this office, but they are known to corroborate fully the experience of 1878. Pending their receipt, the Surgeon-General was on the 16th ultimo requested to report whether

the experience of the past year had or had not justified the changes ordered by Government. All the medical officers attached to the various institutions affected were at the same time called upon to report as to the sufficiency and efficiency of the present dietary scale on professional grounds only, and the quality of the articles supplied. The experience of the Ladies Committee of the Nurses Institution, and of the Lady Superintendent of Nurses, was also ascertained.

9. The Surgeon-General's report on these matters has been received, and is appended to this resolution. It embodies a mass of testimony to the sufficiency and satisfactory working of the present system. In the few instances where doubts are still expressed regarding it, an examination of the facts makes it evident that this is due to misapprehensions on the part of individual officers, and not to any shortcoming in the system itself. Thus it is clear that Dr. Smith, the Principal of the Medical College, while loyally striving to give effect to the new system, has not yet fully grasped the true meaning of a sanctioned *average* scale. A sanctioned *average* is not a *maximum* allowance. As remarked by the Surgeon-General, the fact that one-fifth of the total sum sanctioned for diets remained in hand and unexpended at the close of the year, proves that an ample margin was left for special cases. Dr. Smith should have seen from his monthly accounts that this balance was steadily accruing, and that he had a large fund at his disposal from which he could have met any grant of luxuries or extra diet which he might have thought necessary, and there is no doubt in the Lieutenant-Governor's mind that the only reason why this money was not spent was that it was not considered really necessary to expend it. Any way, it is manifestly absurd to say that the Government scale is insufficient when nearly twenty per cent of it was actually saved. The Lieutenant-Governor thinks it right to say that, when he invited from Dr. Smith an expression of his opinion on the sufficiency of the diets under the new scale some weeks ago, Dr. Smith distinctly stated that the new system had succeeded beyond all his expectations, and that he had nothing whatever to complain of, except that the water-supply at the hospital might be improved. Again, Dr. Smith's doubts in respect of the character of the meat supplied are disposed of by the report of Dr. McLeod, who, as Health Officer of the Town, has exceptional knowledge on this point. Dr. Jones (whose evidence on this point in 1878 is much relied upon by Dr. Ewart) has with more extended experience come to the same conclusion as Dr. McLeod and other officers upon this matter. Here, again, it is a question of fact, and not of opinion, that is at issue. There is no possible room for doubting that really good meat is to be procured at the rates allowed by the hospital contract. The rates quoted by Dr. Smith are the retail prices charged for picked joints of the fattest meat procurable, a class of meat wholly unsuited for hospital purposes. The Lieutenant-Governor has had samples of the meat supplied sent to him by the Superintendent of the market, and has satisfied himself by personal experiment that it is good and wholesome and of excellent quality. If the sanctioned scale has sufficed in years of exceptionally high prices, such as the last two years have been, there is every reason to believe it will be more than sufficient in ordinary times. In the matter of rum, it is curious to observe the conflicting views held by different officers as these are brought together by the Surgeon-General, each being thoroughly inconsistent with the other. When individual doctors differing in this way form but a minority of those consulted, the Government can only accept the views and actual experience of the majority. At the same time the Surgeon-General has done right in pointing out that the Government orders nowhere insist on the use of rum in cases in which it is on reasonable grounds deemed to be unsuitable. As regards milk, Dr. Cayley's experience in the Mayo Hospital is conclusive. There is no reason whatever why pure, unadulterated milk, drawn from cows brought to the hospital compounds, should not be given to every patient who requires it. The allowances carefully administered are amply sufficient to secure this. If for any good reason this is found on further experience not to be the case, the Lieutenant-Governor will be quite ready to revise them to that extent. The Lieutenant-Governor accepts also the Surgeon-General's suggestion that the European Small-pox Hospital should be exempted from the application of the rule as to average cost of diets.

10. But making full allowance for these difficulties and mistakes, being after all such as might have been expected to occur in the introduction of a new

ANNEXURE I.

Dated Montpelier Hall, Brighton, the 19th November 1879.

From—JOSEPH EWART, Esq., M.D., Deputy Surgeon-General (Retired), late Superintendent of, and Surgeon to, the European General Hospital; Professor of Physiology in the Medical College; Presidency Surgeon; and President of the Snake Poison Commission, Calcutta,

To—The Secretary to the Government of Bengal, Judicial and Political Depts.

I HAVE the honour to acknowledge the receipt of your letter of 18th February last, intimating that a copy of a Report on the Medical Institutions of Calcutta, submitted by the Committee appointed to enquire into Medical Expenditure in Bengal, together with a copy of the Resolution recorded by the Lieutenant-Governor thereon on 25th January 1879, has been forwarded to me, and that it has appeared to the Lieutenant-Governor that I may desire to offer some remarks in connection with the report. The said Report and Resolution have not reached their destination. Having, however, been otherwise favoured with the perusal of a copy, I propose to make some observations upon them, so far as they refer to my administration of the General Hospital, which terminated on the 31st of March 1876.

2. Before doing so, I beg permission to point out that my letter of the 17th December 1877 was penned for the express purpose of securing "both Dr. Elliot and myself from judgment and sentence without a hearing." This reasonable request has not been conceded, notwithstanding the declaration in the Resolution of the 18th February 1878 that the "Lieutenant-Governor had no intention of pre-judging the case," for, as regards the administration of the late Dr. Elliot and myself, the case has been got up in the report, and judgment passed in the Resolution of the 25th February 1879, in my absence, and without the slightest reference to me. Seeing that the Committee was appointed on the 18th February 1878, and the Resolution on its report was dated the 25th January 1879, there ought to have been no difficulty in referring to me, after the decease of Dr. Elliot in the beginning of 1878, and thus affording me an opportunity of explaining any points requiring explanation, before an unfavourable judgment by Resolution—which is an emphasized endorsement of the said Report—was passed.

3. Whatever may have been His Honor's notions of impartiality, or of holding the scales of justice evenly, or of preserving himself from an appearance of pre-judging the case when the Resolution of the 18th February 1878 was evolved, the change of front in the Resolution of the 25th January 1879, in which he has most unmistakably pre-judged the case, is strikingly and singularly apparent. As the matter is now presented to me, I am afforded the opportunity of "offering some remarks in connection with the Report," in way of explanation, to a tribunal already committed to an adverse judgment upon the case. Still, notwithstanding the disadvantageous position in which I have thus been placed, I shall not hesitate to avail myself of the small mercy offered, viz. that of offering some remarks in connection with the Report.

4. I am of opinion that the foremost principle in the government of a hospital is the greatest possible economy of health and life, or the utmost attainable alleviation, mitigation, or cure of disease. This principle should always be posted in the foreground and override mere money considerations. Viewed from a medical, as distinguished from a pecuniary point of view, true economy in the management and regulation of the affairs of a hospital consists not so much in the saving of money, as in the conservation and saving of life. It follows therefore that prescribing officers should be empowered to order, without fear of incurring the displeasure of their superiors or Government, whatever they may deem needful for the dietetic, hygienic, and therapeutical management of the patients confided to their care; and all obstacles to the easy and ready accomplishment of this purpose should be removed or reduced to a minimum.

5. The impression conveyed to my mind, after a perusal of the Report, is that the usefulness of prescribing officers is in danger of being impaired by the primary importance attached to the saving of money, and by thus virtually relegating the treatment of disease, in view to its relief or cure, to a minor or secondary position. The saving,—effected by reducing the diet money to an allowance so low, that the desired quality of the standard components of the dietary cannot be commanded by open competition in the market at the price sanctioned to be paid for them, and that extras and stimulants, probably also of inferior quality, cannot now be ordered excepting under restrictions and an espionage, the effect of which is that they are almost entirely withheld,—is manifestly accomplished at the expense of the comfort and well-being of the sick. So must be interference with freedom of action in the exhibition of certain drugs—it may be of obtaining instruments too—on account of their costliness.

6. It is stated in Rule V, page 2, "that the maximum limit for European diets, inclusive of all extras and stimulants, is eight (8) annas a day, instead of twelve (12) annas formerly sanctioned." Prescribing officers are to be held individually responsible if this rate—based on an experience of a few months, under what has been denominated "a reign of terror and panic," which may last for some time longer—is exceeded. Rule VI, page 3, virtually commands them "to work below this limit." But should the allowance fail "to meet all cases," Rule VII "provides that in any special case, where increased expenditure

is unavoidable, the present rule should be maintained, and the amounts be passed on a certificate on honour that the expenditure was necessary, supported by a detailed bill." This is an ingenious and laborious device, calculated to hamper and embarrass prescribing officers, and to place an obstacle in the way of their obtaining, without difficulty or friction, what may be needed for the sick,—at a time, too, when all the skill and knowledge they possess should be, with undivided attention, concentrated on the promotion of their comfort and well-being. It is the desire of Government that "not less than they require should reach the sick," but under the recently fixed limit of eight (8) annas, or a shilling a day, there is irrefragable testimony to show that this intention cannot be honoured if due regard be had to the quality as well as the quantity of the food supplied. Thus in his evidence the Superintendent says (Annexure D, Appendix C):—Q. 22.—Do many contractors send in tenders? A.—I advertised largely, but there is no competition. Only one man tendered. He sent in two tenders, and we took the lowest. Q. 23.—Why is this? A.—They give us inferior meat. Our prices won't command good meat. We pay four (4) annas and six (6) pies for mutton, and two (2) annas and three (3) pies for beef. Q. 24.—Can you fine the contractor? A.—Yes? He has been fined repeatedly, and it makes him worse. Q. 25.—Could he supply good meat at the price? A.—No. Q. 26.—What is the nature of the complaints described as frivolous? A.—Chiefly about short weight and bad tea. We pay eleven (11) annas a pound for tea, and it is difficult to get it good at the price.

7. Now if the rigid economy enforced renders it impossible to obtain for the use of the sick European sailors and others frequenting the General Hospital fairly good mutton, beef, and tea, what, it may be enquired, is the quality of the bread, butter, milk, eggs, fowls, extras, wines, stimulants, &c., provided? And what is the nature of the protection and justice afforded to the sick by "a good administrator" who is not ashamed to declare that he regards their complaints about "short weight" and "bad tea" as frivolous? In truth, this revelation is so extraordinary that language fails to emphasize it. Yet it has not commanded any notice whatever in the Government resolution on the report. Considering that the witness has exerted himself to the utmost to introduce the severest possible economy in the working of the hospital, his adverse evidence ought not to have been ignored or treated as unworthy of attention. Has it been passed over in silence, because to recognize its force would, as regards diets, in great measure, if not altogether, explain past expenditure and existing economy, and thus cut the ground from under the feet of the Committee and Government? As the allowance is insufficient to enable the head of the hospital, on his own showing, to purchase good food, what, it may fairly be asked, is the real nature of the vaunted economy now secured, or of the (false) "facts in the Committee's report" which "cannot be gainsaid?" The answer must be manifest to any ordinarily constituted understanding. The allowance for food, extras, and wines is arbitrarily fixed at a rate so parsimonious that during a period of great commercial depression and stagnation, when competition ought to have been keen, only one man comes forward with two tenders, the lowest of which is accepted. Cheap provisions of inferior quality are thus supplied. Extras and alcoholic stimulants, doubtless also of a cheap and worthless description, are all but disallowed or withheld, apparently for the purpose of justifying the adoption of the new system of an economy practically as inflexible and uncompromising as it is plainly, from a medical point of view, unjustifiable and inhumane.

8. The estimate of twelve (12) annas a day was fixed upon after due inquiry and deliberation, not because European patients could not be imperfectly dieted for less, as they had been before in a way that had been deemed discreditable to the authorities by means of beef and mutton of "melancholy toughness," and other provisions and comforts guilty of analogous inferiority of quality, but because it was ascertained on unimpeachable testimony that wholesome food, extras, and alcoholic stimulants, owing to rising market prices, could not be purchased by the old allowance, and because it was considered necessary to fix upon a limit yielding an adequate margin to cover all emergencies.

9. Almost simultaneously with the adoption of the twelve (12) annas estimate, the contract system for victualling the hospital was introduced. Tenders were invited in the open market for provisions, &c., and a day and hour fixed for the opening of the same in the presence of the tenderers by a properly authorized committee, composed of the Deputy Surgeon-General as President, and the Surgeon-Superintendent with one of the Resident Surgeons as members. The price to be paid for all articles of diet, &c., was then settled according to muster. Good and wholesome meat, fowls, eggs, bread, butter, milk, extras, wines, &c., were thus secured in open day. The patients were under this system satisfactorily fed, well within the allowance sanctioned, as is fully acknowledged in the report of the Committee.

10. The provisions were daily inspected in the early morning by one of the Resident Surgeons nominated by myself for this important duty. Deviations from the standard contracted for were at once noted and rectified. The utmost possible care was taken by encouraging patients, lady superintendent, nurses, assistant apothecaries, and others to submit complaints, and repeated visits were made by the Surgeon-Superintendent, Resident Surgeons, and Steward, at unexpected periods at meal times, in their respective wards, with a view to make certain that the food and extras as prescribed actually reached

and were consumed by the sick. The patients being as a rule Europeans and Christians of many persuasions and nationalities were intelligent enough, under such arrangements, to see that they obtained what was ordered; and to further the accomplishment of this purpose in the case of helpless and bedridden patients, effectual assistance was, in compliance with my express instructions, rendered by the lady superintendent and her nurses. Complaints which under this procedure soon became rare, were invariably investigated at the time of their being submitted in the presence of the complainants, and the ultimate result was that they soon became almost exclusively confined to imperfect cooking. This cause of dissatisfaction remained uncorrected up to the date of my departure. The fault, however, lay not with me. The records of the institution will show that, during my tenure of office, no stone was left unturned to move Government to grant wages sufficiently attractive to command the services of efficient cooks, but absolutely without success.

11. It does not appear that the Committee have taken ordinary pains to hold the scales evenly and impartially in this matter of the cost of diets. Had such been the case, the result of a careful scrutiny of the prices paid formerly and those now paid under the "lowest tender" experiment would have been recorded. Such a comparison would have thrown some light on the subject, and vindicated in great measure the efficiency of this branch of my administration. It would have shown that the true secret of the present economy is the provision of cheap inferior food, extras, and wines, purchased at such degraded rates that competition for the contracts has become conspicuously distinguished by its absence. The extraordinary denial of wines and stimulants obtained in the cheapest and worst market is, under the circumstances, not to be deprecated. But the excessive disallowance of wholesome wines in appropriate cases and conditions of sickness cannot be justified. In the matter of feeding and stimulating the sick, I trust I may be pardoned for declining to subordinate my judgment and opinion as to what is right, proper, and humane to those of the Committee.

12. What is to be rationally advanced in favour of the system of giving the European poor and sick people stranded in the General Hospital food stuffs, extras, stimulants, and comforts so bad that, on the testimony of the Superintendent, good mutton, beef, and tea cannot be purchased for the allowance sanctioned, I fail to comprehend. The economy secured will not bear close examination. What is the nature of the economy which has extorted from the Superintendent of a great hospital the humiliating confession that his hands have been so fettered by the magic of red-tape that he cannot provide good beef, mutton, and tea for his European patients? Parsimony, excessive parsimony, practised at the cost of the happiness, contentment, and well-being of the sick, and all the more unjustifiable, since it was understood that the cost of maintaining sick sailors in the General Hospital was to be recouped, at the rate of a rupee per head *per diem*, from the "Hospital Port Dues Fund." If, now, owing to an increasing rise in prices, experience has demonstrated the fact that the outlay is not fully covered by the proceeds of this Fund, it would have been better to take steps to nourish and replenish it to the needful extent, than to have lowered the quality of food given to the sick. Considering the valuable services rendered to the community by the seafaring classes, from which most of the male patients are drawn, such an increment of the said dues, if indicated as necessary, would be far more congenial to the European and native merchants and general public of Calcutta than the existing policy conducted at the expense of the sick poor.

13. The Committee appear to be under the delusive impression that the new diet scales for European sick are more liberal and varied than those employed in London hospitals. The deceptive nature of this liberality and variation is manifest from the evidence of the present Superintendent already quoted. Food distinguished for its cheapness, inferiority, indigestibility, unassimilability, and poverty in nutritive value, obtained by the "lowest tender" experiment and the extinction of competition for contracts, is only procurable. Moreover, no account seems to have been taken in drawing the comparison of the excellency in the quality of all articles composing the diet scales of the London hospitals, and the practically unlimited discretion of the physicians and surgeons to order whatever extras and stimulants are deemed necessary in addition to any of the diets.

14. In the opinion of the Committee "there seems to be no doubt that the general equipment and efficiency of the hospital have been greatly improved of late years." They further declare, by way of qualification, that the expenditure thus incurred—all duly sanctioned by Government—"has been out of all proportion to the improvement" acknowledged. This statement will be best met by the following concise summary of the improvements completed or initiated during my term of office for the feeding, treatment, clothing, and accommodation of the sick:—Improvement in the quality of the food, comforts, extras, wines, &c.; the use of ghee instead of suet in cooking meat for surgical and obstetric cases; an efficient supply of medicines and instruments; augmented supply and better quality of bedding and clothing; an entirely new or improved equipment of furniture for the whole of the wards, latrines, clothing, and drug, store-rooms, library, &c.; increase of establishment; opening and working of the outdoor dispensary; opening of the Sumbhoonath Pundit Ward; monthly contingent of Rs. 100; extension of gas to the eastern wing; introduction of drainage and night-soil depôt in connection with the main sewer; clearing, leveling, and planting of compound; removal of walls to north and west; taking in of new

ground; enclosure of same by substantial iron railing; fitting up the dead-house; construction of road and gate to the south into Bhowanipore; needful repairs to building and officers' quarters. All these improvements and alterations were initiated by me, and cordially and readily sanctioned by Sir John Campbell Browne, K.C.B., and Surgeon-General Fullarton Beatson, C.I.E., the Chiefs of the Medical Department, and by the Governments of Sir George Campbell and Sir Richard Temple. On the eve of my departure, suggestions for the construction of an operating room, lying-in-room, and quarters for the nurses, which, I understand, have since been completed, were left by me with my *locum tenens*, the late Dr. Elliot. It may be mentioned here, parenthetically, that the location of the Canning Home for Nurses in the grounds of the General Hospital was entirely due to my active intervention and support—a valuable institution, in which the ladies reside, always at hand for the training of the nurses and the supervision of those engaged at the hospital. Further, there was a rapidly progressive increase in the surgical and obstetric departments; the development of an eye department; and the establishment of an outdoor dispensary, the attendance of which, in the fourth year of its existence, or at the end of 1877, when it was abolished by the Bengal Government, exceeded 20,000 new cases. In the face of these facts, and of those recorded in Appendix A., I feel that I am fully justified in taking exception to the declaration that improvements in the efficiency and equipment of the hospital “have been out of all proportion to the advantages secured.”

15. When I joined the General Hospital in 1870 it was wretchedly provided in almost every department. The drug and instrument store formed no exception to the rule. This imperfection was in no sense attributable to any inaction on the part of my able and distinguished predecessor. The prescriptions of my colleagues and myself were daily dishonoured by the well-worn reply “none in store.” In the instrument department the same kind of inefficiency was equally marked. Every reasonable effort was made to bring this important branch of supply up to a standard of efficiency. In effecting this, there is nothing in the report, or the resolution founded thereon, to convince me that I was in any way exceeding my duty to the sick and the Government. Indeed, according to my conception of my duty in this matter, I should have been open to censure had I done less. During my incumbency I was never led to understand that cost, as regards medicines and instruments, was my concern. But it is almost supererogatory for me to state that had it been so, this would not have deterred me from endeavouring to secure for my sick an adequate supply of the best drugs and instruments available, to enable my colleagues and myself to be ready at all times to cope with every conceivable emergency that might occur.

16. In maintaining a sufficient supply of drugs and instruments, I claim to have received the sanction and encouragement of the authorities placed over me. In order to support the accuracy of this statement, it is only necessary to refer to the first page of the report, in which it is recorded that the “sanctioned amounts for food, stimulants, and clothing, &c., were not exceeded; no memorandum of the medical stores was sent to the Superintendent, and though the total expenditure was increasing yearly by thousands (rupees), it attracted no attention. No objection was ever taken to his expenditure, and he was thanked year by year for his services.”

17. It must be known to the Committee that, without the sanction of superior authority, drugs and instruments could not be obtained. That an efficient supply was at length granted was due to the strength of the cause advocated rather than the manner, mode, or power of my advocacy. That cause—the supreme interests of the sick—received the moral countenance of two Viceroys, Lord Napier of Merchistoun and the Earl of Northbrook; the Commander-in-Chief, Lord Napier of Magdala; and the material and indispensable support of two Lieutenant-Governors, Sir George Campbell and Sir Richard Temple; and of two Surgeons-General, Sir John Campbell Browne and Fullarton Beatson. To me it seemed at the time, and it seems so now, that it is impossible to conceive how greater encouragement could possibly have been given in helping me to uphold the efficiency of this as of every other department contributing to the happiness, contentment, and good of the sick.

18. The immediate responsibility for the custody of the drugs and instruments at the General Hospital, for the preparation of indents and stock-taking devolved upon the First Assistant or Resident Surgeon (*vide* chapter XXXV, paragraph 11, page 209, *Bengal Medical Regulations*). When the indents already attested by the signature of the responsible officer were presented to me, the quantities “expended” and “remaining” having been scrutinised, requirements were entered in my own handwriting, and the indents were then signed. In doing so, much trust was confided in the Medical Storekeeper. When I was not satisfied, I verified the quantities of some of the more costly drugs myself. In this matter there was therefore a well-defined distribution of responsibility.

19. To show that I was not altogether impervious to the insecurity of the old store-room, without shelves, near the steward's quarters, I had the present room set apart for drugs fitted up with shelves and provided with Chubb's lock and key. In the old room it was all but impossible to maintain order. In the new one this objection was obviated, whilst security and stock-taking were facilitated to the utmost. Had stock-taking been done systematically by the responsible officer, according to regulations, the irregularities pointed out by the Committee could never have occurred or passed without notice.

20. The irregularities pointed out in Appendix O do not necessarily imply fraud; for the quantities said to have been written off have been found in store. Had they been missing such might have been suspected. Moreover, it is admitted that some of the excess drugs had gone bad, and though the bulk of them is reported to have been perfectly good, yet it does not follow that they may not in most instances have been condemned in good faith as being unfit for use. I must confess that the declaration at page 8, Appendix C, to the effect that "as a matter of fact the great bulk of the excess was perfectly good," would have carried more weight with me had I not already been painfully aware of the testimony of the present Superintendent, proving that, by the undue retrenchment now enforced, he has been compelled to be contented with the provision of bad beef, bad mutton, and bad tea. He evidently disapproves of such a deplorable result of the policy of indiscriminating restriction, rigid parsimony, and the unrelaxing application of the screw. But as his remonstrance has been disregarded in the matter of the staminal components of the dietary, what more natural than that I should infer that a similar policy has been extended to the medicines which were mostly condemned, and that he has been virtually constrained in form or spirit to use them in the treatment of the sick. Be this, however, as it may, the dishonesty, wholesale plunder, and waste levelled against the subordinate apothecaries is utterly unsupported by one tittle of reliable evidence. And it is not too much to say that the alleged irregularities, which could easily have been prevented by enforcing the existing orders and regulations as to stock-taking, are considerably palliated by the excess quantities having been discovered intact in store.

21. Of the many startling fallacies proclaimed in the report, perhaps none is more remarkable than the announcement that, as regards drugs and instruments, "increase in the cost per patient" is "the only true basis of comparison," following the narrative quoted below: "The increased cost of European medicines appears to have been due to a variety of causes. The invoice cost of many drugs has advanced by from 10 to more than 100 per cent. since 1873, and the rate of exchange has gone down from 2s. to 1s. 9d, while a charge of 10 per cent. has been added since 1872 to save Government from loss, and is to be raised to 20 per cent. in future. The introduction of a complete hospital pharmacopœia tended to increase expenditure, but the main cause of it was the development of the out-patient department and the large issue to native out-patients of expensive foreign drugs. The great increase in 1872, before the out-patient department was opened, was partly due to a large quantity of new instruments being supplied, the surgical equipment up to that year having been very deficient."

22. If further evidence were required to show that "increase in the cost per patient" is not "the only true basis of comparison" in dealing with the expenditure of drugs and instruments, a very notable augmentation of surgical and obstetric cases, together with the introduction of the antiseptic system of Professor Lister, a most costly mode of treating wounds, and free employment of disinfectants in the wards, sinks, and latrines, with a view to prevent the outbreak of hospitalism, may be specially cited. To these causes of increased expenditure, also not sufficiently considered by the Committee, may be instanced requisitions for new instruments and drugs, viz. an equipment of instruments for the eye department, &c., galvanic cautery, weighing machine, spray producers, hypodermic syringes, &c.; hydrate of chloral, bromides of potassium and ammonium; hypophosphites.

23. The disturbing effect on the fallacious theory that "increase in the cost per patient" is "the only true basis of comparison" may be more clearly demonstrated by a brief and authentic record of the increase which took place during my administration of the surgery and midwifery in the hospital. In 1872 "seven surgical cases remained over from last year, and ten new cases for operation were admitted, making a total of seventeen treated during the year. The cases have all done well and upheld the remarks which I made last year relative to the freedom of the hospital from septicæmic diseases" (*Report of Calcutta Med. Institutions for 1872*). In 1873 "one case remained over from the previous year; seventeen new operations have been performed with uniformly successful results" (*Idem for 1873*.)

In 1874 "the number of operations performed during the year" is as follows:—

		Operations.	Deaths.
European males ...	Major	41	1
	Minor	51	0
Native males ...	Major	17	0
	Minor	15	0
Women and children	Major	9	4
	Minor	6	0

"There has not been any case of pyæmia during the year" (*Idem for 1874*). In 1875 I know from recollection that the surgical work done was greater than in 1874, and that, in spite of an epidemic and the importation of many cases of erysipelas, under the antiseptic system, always rigidly enforced, there was a remarkable absence of pyæmia. This steady development of operative surgery, with freedom from hospitalism, continued with unabated progress down to the date of my departure on 31st March 1876. In the Sumbhoonath

Pundit Surgical Ward increase in the surgical work is very apparent from the facts subjoined. The average daily sick was—

14 in 1873,
19 „ 1874,
22 „ 1875.

In 1872 “there have been 16 deliveries during the past, and one remained over from the previous year. The whole of these cases have done well. To this list must be added four cases of abortion, which have also been treated with success. There has not been a trace of septicæmia or other condition of blood-poisoning to which the puerperal state renders the lying-in-woman more than usually liable in any of these cases” (*Calcutta Med. Instit.*, 1872). In 1873 “there have been 24 deliveries, and one of these remains over to be accounted for in the returns for 1874. There have been two cases of genuine puerperal fever, and one of phlegmasia dolens. One of the cases of puerperal fever proved fatal. Although at the time there were other confinement cases, in no instance did the disease spread to any of those actually confined in hospital” (*Idem*, 1873). In 1874 “there were 20 cases of delivery during the year, and but one death. The midwifery ward has been free from puerperal fever or septicæmia” (*Idem*, 1874). In 1875 I believe the deliveries were little, if at all, short of 40. To these disturbing causes, which ought to have been known to the medical members of the Committee, may be added the cost, as is admitted, of the outdoor dispensary opened in 1873 or 1874. In 1875 the new cases amounted to more than 8,000; in 1876 to twice that number; and in 1877, when it was extinguished by order of the Bengal Government, the new cases reached more than 20,000!

24. Now, in consideration of the confession quoted in paragraph 21, in which the Committee give several important reasons for the increase in the cost of drugs and instruments, and of the equally important facts, which I undertake to say cannot be gainsaid, given by myself in paragraph 23, I am curious to know how the Committee have arrived at the conclusion that the “great increase in the cost per patient is the only true basis of comparison.” Such a comparison would only be really valuable and reliable if the conditions and circumstances contrasted were analogous. That they were certainly not so is manifest from the great and rapid increase of surgery and midwifery. Thus, to compare the cost per head for drugs and instruments from 1872 to 1875 inclusive, when the surgical and obstetric work underwent rapid and sensible increase, when the most expensive method of dressing wounds ever invented—the antiseptic system of Professor Lister—was in full and successful operation, and when every new medicine, instrument, or appliance considered necessary for the well-being of the sick was readily and cheerfully sanctioned and obtained, with that of such a year as 1868, when there was almost no operative surgery, little or no midwifery, a very defective supply of drugs and instruments, and no antiseptic surgery, is, I maintain, to institute a comparison between things not fairly admitting of unqualified comparison. This being a reasonably fair putting of this part of the case, the arithmetical comparison drawn by the Committee falls to the ground as untenable.

25. An analogous display of ignorance or one-sidedness, or both, on the part of the Committee is apparent in the mode adopted to show that the expenditure of opium and morphia must have been excessive, no account having been taken of their very extensive external application for the alleviation and relief of pain. Indeed the largest portion of these, and of laudanum also, were expended in this way.

26. A fallacy underlies the sensational commentary at page 7, Appendix C. Of what possible value is the comparison of the expenditure shown in the indent for 1874-75 with that of 1877-78, when, during the latter period, the treatment of the sick was conducted under a rule of “terror and panic,” or, as is officially announced, when “the expenditure was being carefully watched,” or, to speak plainly, when expenditure was to a great extent absolutely prohibited by the interposition of superior authority, excepting to render it apparent that the saving was accomplished at the expense of the sick. The comparison again of the expenditure of 1874-75 with that of 1869-70 is equally misleading, inasmuch as during the former year the liberal and humane principle of the overruling interests of the sick was the order of the day, side by side with increasing development of surgery and midwifery, &c.; whilst in the latter year there was little surgery and midwifery, and the system of regulating supplies by the disallowance of more than certain quantities of medicines, and of new drugs almost entirely, was in full operation.

27. As regards the small sums formerly realized for paying patients, the answer is that advances were not enforced and the screw was not put on—a state of affairs inherited by me and perfectly well-known to the authorities. Not only so the general wards were made so attractive and comfortable, under the benevolent Governments of Sir George Campbell and Sir Richard Temple, that patients became satisfied with them. This being so, the few private rooms available (not wards as amplified by the Committee) were mainly used for the segregation of bad surgical, obstetric, and other cases. Thus in the western wing the two rooms in the male surgical ward and two in the female ward were so utilized. In the central block one room was set apart for the reception of cholera cases on admission, one for the storing of ward linen and clothing, one for ophthalmoscopic examination, leaving one for paying patients; and this was usually employed for the isolation of any bad medical

cases that might occur in this block. In the eastern block the side rooms were generally occupied by cases demanding isolation. It was partly due to my assistants and myself thus being able to isolate bad cases of illness, and partly to the adoption of the antiseptic system of managing wounds, that the hospital, especially on the surgical and obstetric sides, was maintained almost completely free from the generation of septic disease. In so disposing of these rooms, I considered that I was acting within the borders of the discretion accorded to me, and thus contributed materially to the prevention of hospitalism and the successful management of the sick. Moreover, the arrangement was known and approved by those in authority over me, including the Government of Bengal.

28. The summary abolition of the outdoor department is a retrograde measure. The grounds on which it was closed, viz. that it was never properly sanctioned, will not bear close examination. It met with the full cognizance and support of Sir Richard Temple (*vide* Appendix C). He repeatedly saw it in working order. He regarded it as an essential complement of the hospital, and a means of doing a vast amount of good among the native population. It was only begun tentatively in 1873 or 1874, but its success became so rapidly developed, that in 1875 the attendance amounted to over 8,000, which was doubled in 1876, and I am credibly informed that in the year 1877, at the end of which it was closed by order of the Government, the new cases reached the respectable total of 20,248.

29. The virtual abolition of the midwifery department is also a mistake. It met a real want among the poorer classes of the Christian community of Calcutta and the neighbouring stations of Lower Bengal. It was, indeed, becoming so popular that, miserable as the accommodation was, judged from the standard of a European hospital, it commanded the attendance of a patient, on the showing of the Committee, all the way from Delhi; and in four short years the annual deliveries rose from 16 to 40.

30. The removal of the women and children to the building formerly occupied by the in-patients of the Sumbhoonath Pundit Ward is also a step in the wrong direction. It means the removal of the Sumbhoonath Pundit Surgical Ward, and the impairment of the usefulness of the female department, on account of the limited accommodation available. It appears that the Lieutenant-Governor is under the impression that the female patients were formerly removed from this building to make way for the patients of the Sumbhoonath Pundit Hospital. This was not so. That building was formerly employed by the military authorities for the accommodation of the sick females and children belonging to the European garrison of Fort William. It had never been occupied by the female patients of the civil side of the General Hospital. It would have been better to extend the department by giving up to it the adjoining accommodation in the upper floor of the western block, vacated by Mrs. Hickie and her nurses on their transfer to the new quarters provided near the Canning Home in the hospital grounds; or it would have been better still to have set apart the eastern wing as a Lying-in, Female, and Children's Hospital, as suggested by Lord Napier of Merchistoun, Acting Viceroy. Then, as his Lordship declared, Calcutta would have been provided with a good and healthy Lying-in, Female, and Children's Hospital for the use of the poorer classes of the Christian community.

31. Not the least curious part of the report is that in which it is stated that "the past management of the General Hospital has been characterized by great laxity," a censure which is considerably neutralized by the declaration which immediately follows, that "it is nevertheless true that much waste and extravagance must be ascribed to a system which sanctions maximum charges without making any provision to secure economy, and proper adjustment of supplies to requirements within the limits of the maximum." It should be premised that what is here called waste and extravagance was simply moderate and necessary liberality in the feeding and treatment of the sick. It should further be observed that it is altogether incorrect to say that the system made no provision to secure economy, or the proper adjustments of supplies to requirements within the limits of the maximum. The Committee were perfectly well aware that, notwithstanding a liberal and benevolent system of feeding and comforting the sick, the provisions to ensure economy and the proper adjustment of supplies to requirements were always so successful as to demonstrate monthly a substantial saving within the limits of the maximum allowed. Under the new system the allowance is so illiberal that now cheap and inferior food is provided, and equally cheap inferior wines and extras all but withheld, which does not to my mind show a justifiable and proper adjustment of supplies to the requirements of the sick, whatever may be its relation to the parsimonious maximum of the present régime.

32. The diet sheets should not have been abolished at the General Hospital. Apart from their being required to enable the auditing officers to pass expenditure for wines, extras, and diets, they were useful to prescribers and patients. If the entries are made at the time of the medical officer's rounds and then initialed, as suggested by one of the members of the Committee, close to the column in which the latest entry has been inserted, these sheets would be a check upon excessive expenditure, and when completed at the end of the month form vouchers for the auditing authority. Moreover, the intelligent European patient could satisfy himself by a perusal of his diet sheet suspended at his bed-head that he received the things therein ordered. With a view to give similar consolation to those who could not read for themselves, viz. the bedridden and helpless, the nurses, lady superintendent, and others had only to refer to this document. The dotting down diets, wines, and

extras on limited space available on the bed-head ticket may suffice for the present tight-fitting plan of feeding the sick, but it would never answer under a more liberal and humane régime. Besides, these bed-head tickets are hospital or professional records and could scarcely be spared as vouchers. Without the diet sheets the plan sketched by the Committee does not offer a sufficient guarantee that what has been ordered by the prescribing officers will actually reach the patients as intended. The best judge of the quantity and quality of his dietary is surely the man who has to consume it. But by abolishing the only document which shows him, in adequate form and clearness of detail, whenever he chooses to refer to it, the exact quantities of the articles ordered, the best of all safeguards or guarantees that he obtains what has been prescribed has been removed. Indeed the professional value of the diet sheet is so striking that this alone ought to justify its retention. This use of the diet sheet is a virtue fully recognised in British military hospitals. I maintain that the sailor patients who contribute the bulk of the sick at the General Hospital should not be denied the great advantages offered and secured to them by the existence of the diet sheet, or some substitute equally efficient. If the diet sheet is no longer required as a voucher, provision for a daily record of the information it affords might be made in an amplified bed-head ticket. But no substitute or modification of the bed-head ticket will be satisfactory, which does not present to the European patient a full, legible, and daily account of the diet, extras, comforts, or stimulants ordered by the medical officer in charge of his case.

33. I have now to point out the transparent departure from ordinary propriety and dignity on the part of the Committee in charging the hospital subordinates with waste, extravagance, pilfering, and dishonesty, &c., without adducing any trustworthy proof of the actual existence of the same. Humble and poor as these servants of the State are, their characters are nevertheless dear to them. Fair play, therefore, demanded that such charges should not have been hazarded on mere suspicion. It is doubtful whether they would have been made, had the author or authors of them not been conscious that official privilege protected him or them from the consequences of uttering accusations which, up to the present time, remain equally unfounded and libellous. Notwithstanding the fact that the Government have at their command the vastly comprehensive power of a vigilant police, dishonesty has not been proved against, or brought home, so far as the papers before me show, to any of these subordinates. Savings now effected by an economy degenerating into parsimony—polar in the intensity of its frigidity—does not prove or mean anything of the kind. These economies imply, as I have shown in this communication, in reality the retrograde substitution of an inferior, cheap, and restrictive, for a progressively superior, liberal, and expansive method of provisioning, treating, and accommodating the sick. They will doubtless be justified by future statistics manipulated by the same agency as has apparently succeeded for the time in misleading the Bengal Government in this matter of civil medical administration and management. Such fallacious statistics may have a special fascination for their compilers, but the time is not far distant when a revision of this new and impoverished system will have to be made in the interests of the sick.

34. The fact seems to have been overlooked that in medicine as in Government, rapid progress has been the order of the times in which we have been living and acting. In either case progress generally means augmentation of expenditure. What would the conscientious and far-sighted head of any Indian department say if the Imperial Government seriously proposed that its "rapidly increasing cost should be brought back to the limit which it has long overstepped," or, in short, to the position it occupied, say, in 1870? Would he not, in every parliamentary way possible, resist such a proposal? Doubtless he would in the interests of the "tax-payers of India." Yet it requires but feeble intelligence to enable any one to perceive that this retrogressive principle has been applied to the administration and management of the General Hospital.

35. The report is designedly calculated to gain the approbation of the authorities in the Financial Department, although in many important particulars it is diametrically opposed to the genuine interests of the sick poor, for whose benefit the hospital was established and maintained. Retrogression is symbolized in characters which cannot be overlooked by any one acquainted with the management and internal economy of the institution. To such an extent is this the case that, unless the strong pressure now, on the admission of the Superintendent, encumbering the executive is relaxed in the matter of food, medicines, &c., it will be impossible to ensure the practical observance of the foremost and essential principle in the regulation and government of the hospital—the greatest possible conservation of health and life, or the utmost attainable alleviation, mitigation, or cure of disease.

36. It will be observed that, in making these remarks, I have confined myself chiefly to the principles involved in this controversy. The intentions of the Committee may have been good and disinterested. But what kind of good intention is that which impairs the quality of the food and extras, and limits the supply of drugs and instruments required for the feeding and treatment of the sick; abolishes three most important departments, viz. the native surgical, midwifery, and out-patient departments; reduces the accommodation for women and children by one-half, and cripples the administration by excessive reductions in the establishment?

37. My case would scarcely be complete without some allusion to the constitution of the Committee. Nothing can be further from my feeling or intention than to reflect upon

the honour of Dr. Jones ; but I cannot hesitate to say that, as throughout the whole of the sittings of the Committee of which he was a member, he was officiating for me as Superintendent of the General Hospital, it would have been fairer both to himself and to me if he had not been placed in the invidious position of acting as one of my prosecutors and judges. The same remark applies nearly equally to those members of the Committee who, whilst sitting, held charge of other Calcutta hospitals. If the Head of the Medical Department and the Deputy Surgeon-General of the Presidency Circle could not, as is usual on such occasions, be made available in conducting the inquiry, it appears that, in a matter to which the local Government attached such extraordinary importance, the Councils of medical officers serving under other Governments might easily have been requisitioned. Had a course so impartial been adopted, the conclusions of a Committee thus constituted could not have failed to command the unqualified respect of the medical profession and the public.

38. In conclusion, I have to say that if, in availing myself of the opportunity afforded me to offer some remarks in connection with the report, I have been led to extend my criticisms, in some measure, even to the action of the Bengal Government, I claim the importance of my cause—the supreme interests of the suffering sick poor seeking relief or cure in the European General Hospital—as my justification. When the temporary and evanescent influences which have been agitated for the purpose of retarding the advancement of this cause have passed away, and reasoning philanthropy and benevolence have once more been allowed to resume sway in the Councils of the local Government, its ultimate and permanent progress to a triumphant issue will, it is confidently hoped, be certain, final, and complete.

APPENDIX A.

Minutes of Visitors to the General Hospital during my term of office.

I HAVE several times visited the General Hospital (including the recent visits with His Excellency the Commander-in-Chief and Lady Napier of Merchistoun), and on all occasions I have been struck by the cleanliness and good order, and air of contentment and comfort which seemed to prevail. I believe it to be a thoroughly successful institution, which affords an asylum to a very large number of strangers to a country where they very much stand in need of comfort and aid.

GEORGE CAMPBELL,

9th March 1872.

Lieutenant-Governor of Bengal.

On visiting the General Hospital in company with the Lieutenant-Governor, I was so much gratified at seeing the care and attention bestowed on the patients, the friendly confidence which they showed towards the medical officers, and the relief afforded in most distressing forms of disease, that I felt a desire to record my tribute of respect for, and approval of, Dr. Ewart's management of the institution.* I thankfully avail myself of the opportunity now afforded.

Everything that skill could effect appears to be afforded to the patients, and in such a kindly manner as to render relief doubly acceptable.

NAPIER OF MAGDALA,

9th March 1872.

Commander-in-Chief in India.

[* It was the expression of this desire on the part of Lord Napier which led to the institution of the Visitors' Book.—J. E.]

On visiting the hospital I was very favourably impressed with the general condition of the institution under Dr. Ewart and his subordinate officers—Dr. Nicholson and Dr. Joubert. Dr. Ewart's success, too, has been achieved under some disadvantages: for the buildings, though on the whole suitable, and in some respects very good, do yet need more frequent repairs than they now receive apparently; also the furniture and equipments generally are hardly on a scale commensurate with the importance and usefulness of the institution. The rectification of these defects will involve some expense from time to time, for which I will endeavour to find the means, so far as may be practicable. The hospital was very full at the time of my visit, but the patients seemed excellently cared for, and the establishment was efficient and competent.

RICHARD TEMPLE,

27th September 1874.

Lieutenant-Governor of Bengal.

Visited the General Hospital this morning in company with Surgeon-Major Ewart and Surgeons Nicholson and Joubert. I have visited this hospital at various times during the past 30 years, and I may safely say, without disparagement to previous systems of management, which were excellent in their day, that I have never seen it in such a high state of efficiency as it is at present. I hope to have opportunities later on in the cold season of placing on record from time to time the general improvements which have led to this result. Two things struck me particularly to-day, viz. almost complete ventilation throughout, and the absence of overcrowding. The separation of the surgical cases from the remainder, and their localization on one upper floor, is a striking feature. The using of the basement of the building facing the main gate as a library, with the conversion of part of it into an outdoor dispensary, is another. The decoration of the walls with pictures—some of them very neatly framed and glazed—is a recent innovation that might be followed with advantage in Europe and hospitals throughout the country. The conservancy arrangements were in the main almost perfect. A little more ventilation is required in one or two of the latrines; but this, I understand, is being provided for. And I venture to suggest that the urinary vessels be kept a third filled with water ready for use. The mixture of urine and water creates no smell and is not deleterious. Dr. Fawcett when in charge of the Alipore Jail went so far as to fertilize grass with it. I think an eye ward would be an advantage for several reasons. There were 160 patients altogether (exclusive of 19 outdoor sick), of the former 120 were men, 16 women, 16 children, and 17 natives. The General Hospital has now become a large field for the study of medicine and surgery, and I congratulate Dr. Ewart and the surgeons who co-operate with him—Dr. Nicholson and Dr. Joubert—upon the very satisfactory way in which the combined objects of the institution are carried out.

C. R. FRANCIS, M.B.,

Deputy-Surgeon-General.

14th October 1874.

On again visiting this hospital I was glad to find that one of the wards, now superintended by Dr. French, has been repaired, and is now looking smart and well. I have perused with satisfaction Dr. Francis's testimony to the improvement he has witnessed in this hospital within the last 30 years. I am sure that the scientific and professional branches of the work are carried on excellently.

But on further consideration, I adhere to the opinion expressed in my minute of the 27th September last, that "the furniture and equipments generally are hardly on a scale commensurate with the importance and usefulness of the institution." I desire now to emphasize that opinion, and to state that no effort must be spared to equip this hospital properly. I need not point out to the eminent professional gentlemen connected with this institution that, for humanity, it is not at all enough to afford first-rate medical and surgical treatment. I am sure that they know better than I can explain that the sick require comfortable beds to lie upon, good diet, nice table furniture, and good bath-rooms, and clean clothes and bedding.

I was glad to find on my last visit that something had been done to obtain fresh bedding, crockery, cutlery, all of which are grievously wanted, also to discharge contractors who fail to supply good articles of diet, and to supply almirahs for keeping the stores of bedding and clothes in good order, also to condemn the rubbish with which the store-rooms are filled.

The whole store department requires better organization, which I shall hope to find achieved by the time I next visit the institution. I shall also hope to find the remaining wards fully repaired and their flooring improved, also the grass in the compound preserved, which is not properly done at present.

I am aware that the officers of the hospital have had financial difficulties to contend with; I will try to remedy this, and if means shall be supplied, I shall hope to find the administrative branch of the work (as contradistinguished from the professional) considerably advanced.

RICHARD TEMPLE,

Lieutenant-Governor of Bengal.

22nd March 1875.

[The improvements and alterations mentioned in this minute had been previously applied for by me. Some had been rejected by Government or the Medical Department for alleged want of funds, and some remained under consideration. As, however, the extraordinary and benevolent interest evinced by the Lieutenant-Governor in the hospital was most welcome to me, I had copies of all my applications and estimates prepared, and sought an interview with him, which was readily conceded. At this interview I had no difficulty in proving, from the correspondence submitted, that the whole of the shortcomings noted by

His Honor was chiefly due to the inaction of the Government over which he himself presided. This being so, Sir Richard Temple at once volunteered to remove the censure implied, doubtless unintentionally, and this is done promptly and handsomely in the minute given below.]

SINCE recording the above minute I have had the advantage of conferring further with Dr. Ewart. I am glad to find that he has already taken practical steps to supply a fresh and complete set of furniture and other necessities, and that he had on various occasions previously represented the insufficiency of the supply of many requisites. Doubtless there have always been, perhaps there still are, financial obstacles to the obtaining of adequate supplies. And every allowance must be made for this. My object in writing on the 22nd was not at all to imply any blame on the medical officer at the head of the hospital, whom indeed I know to be very able and zealous, and to have achieved much good under many financial disadvantages. My object was, and still is, to declare that the hospital must be much better furnished and equipped than it now is, to put, as it were, the hospital authorities on their mettle in this respect, and to make it clear that means must somehow be found for supplying what is wanted.

RICHARD TEMPLE,

Lieutenant-Governor of Bengal.

26th March 1875.

VISITED the hospital this evening and went through all the wards in company with Drs. Ewart, French, and Mackenzie; found cleanliness and order prevailing in every part at present occupied (one wing is under repair); bedding and clothing very clean and tidy, and the patients evidently well cared for in every respect.

R. COCKBURN,

Deputy Surgeon-General.

22nd July 1875.

ON visiting the institution without notice, I was glad to find the officers at their work and in their places; also I observed a marked improvement in all the matters which were commented upon on my former visits. The next thing to be attended to is the want of trained attendance, nurses and others, the establishment of which is as yet insufficient.

RICHARD TEMPLE,

Lieutenant-Governor of Bengal.

5th August 1875.

VISITING the hospital on the morning of November 21st, I was glad to find that great progress had been made with the repairs of the building, and with the providing of the furniture and equipment. The condition of the institution seemed to me to be decidedly good. I bear in mind that accommodation is needed for nurses.

I have communicated with the Chief Engineer about enclosing additional ground in the hospital compound. And I will endeavour to arrange that the adjoining village (now in a very insanitary state) shall be brought under the direct supervision of the hospital authorities.

RICHARD TEMPLE,

Lieutenant-Governor of Bengal.

SINCE my last visit to the General Hospital, I find the most valuable alterations and additions made to the buildings and their entourage, so as to leave the place scarcely recognisable. The improvements in all sanitary arrangements are most marked, and at the same time the interior arrangements evince the continued care and attention of Dr. Ewart, and the liberality of the Bengal Government.

The invaluable blessing of a nursing establishment has now assumed a practical form, and I trust will soon be completely matured.

I have not had an opportunity of seeing the food supplied to the sick, but it is doubtless in keeping with the rest of the arrangements. There may be still room for improvement, but the hospital appears to me to afford every comfort for the sick, and I shall be very glad if every European hospital in the country has similar advantages.

NAPIER OF MAGDALA,

Commander-in-Chief in India.

1st January 1876.

I AM very much pleased with the hospital, which I found in good order and well ventilated.

1st January 1876.

ALBERT EDWARD (PRINCE OF WALES).
SUTHERLAND, DUKE OF.

I SEE great improvement in the General Hospital since I saw it last in 1872. The changes are such as must be conducive to the welfare of the sick, and they are most creditable to all concerned with the administration of the institution.

1st January 1876.

J. FAYRE,
Surgeon-General and Physician to
His Royal Highness the Prince of Wales.

VISITED the Presidency General Hospital with Dr. Ewart, and was much gratified with the general cleanliness, comfort, and admirable arrangements for the patients which prevailed. I am greatly indebted to Dr. Ewart for the many valuable suggestions I received from him as to hospital management.

3rd January 1876.

W. H. GREGORY,
Governor of Ceylon.

MANY improvements have been made in this hospital of late years, and I am glad to see such marked progress in this direction since I visited the place only a twelvemonth ago. Both inside and out it is very different from what it used to be, and has now an air of cleanliness and comfort such as it never had before, and which must be of great benefit to the patients. The taking in of the additional ground as proposed will be a further advantage. There are still some minor matters which require attention, such as the proper flooring of the bath-rooms and the removal of the deep drains which surround the basement of the buildings. These and other improvements Dr. Ewart has already in view.

10th January 1876.

JAMES CUNNINGHAM,
Sanitary Commissioner with the Government of India.

I HAVE derived real satisfaction from my visit this morning to this most admirably managed institution, coming away with a well-grounded assurance that talent, experience, and skill are all zealously applied by the Surgeon-Superintendent to make the hospital of vast usefulness to Calcutta. I observed no defect for which the medical staff could be held fairly responsible; for though doubtless there are improvements which they eagerly desire to be carried out, but which the command of the purse alone can secure, Dr. Ewart and his able assistants—I should use the word coadjutors—leave nothing within the compass of their power undone to secure the comfort and general well-being of the patients, while they have the willing and energetic aid of the lady superintendent, Miss Huband, and her intelligent and active subordinates.

10th March 1876.

J. FULLARTON BEATSON, M.D.,
Surgeon-General.

I ACCOMPANIED Lord Napier of Magdala over the hospital, and was much pleased with all I saw. Our visit was unexpected, and took place late in the evening. I was impressed by the great care and sympathy shown to the patients by the lady superintendent and her fellow-workers. This, in addition to the ordinary care and comfort provided in any institution of the kind, must greatly add to the blessing conferred upon the sick and the dying.

24th March 1876.

NEVILLE CHAMBERLAIN, Lieut.-Genl.,
Commander-in-Chief, Madras Army.

I FOUND everything in the General Hospital in as good order as on my former visits, and the same watchful care of the patients. I have heard complaints of the cooking, and am told that the wages of the cooks (Rs. 6) are not sufficient to procure men who can cook properly; considering the general rates of wages in Calcutta, this can easily be understood.

The complaint of difficulty in washing is similar to that which has met me in military hospitals, and arises from the same cause as the cooking. The best remedy

would appear to be the provision of a good washing machine, and at first a person to teach the use of it. If these complaints were well-founded, a representation to the Lieutenant-Governor of Bengal would doubtless bring a remedy.

25th March 1876.

NAPIER OF MAGDALA,
Commander-in-Chief in India.

APPENDIX B.

[DR. ELLIOT discovered, after he had been in office a couple of months, a considerable deficiency in the clothing. The Committee "believe that it must have been made away with gradually in the course of years, and that periodical stock-taking had been a mere form." Dr. Jones is of opinion "that it was not a mere form; that stock was actually taken, but taken by different officers on different days, so that clothes were counted two or three times over." Neither of these views is accurate. On the eve of my making over charge I spent nearly a whole day in going over the clothing and bedding in the wards and store-rooms, with list in hand, and personally ascertained that—making allowance for the things at the wash—the inventory was correct. As to how the theft or loss occurred I give no opinion.]

Dated Holm Head, Bewcastle, Cumberland, the 16th September 1876.

Demi-official from—J. EWART, Esq., M.D.,

To—J. ELLIOT, Esq., M.D., Offg. Surgeon, General Hospital.

I HAVE just received your kind letter of the 22nd ultimo, with enclosures, disclosing—to my surprise—large deficiencies in the clothing and linen of the General Hospital. In my reply, I shall confine my remarks to this portion of your communication.

Under the old system it was found to be next to impossible to keep the bedding, clothing, and linen up to the mark. Every requisition had to be sent to the Steward for compliance, and at any hour of the night or day. The result was that these requisitions were either too tardily answered or not at all, excepting by the time-honoured "none in store." The consequence was that the wards were badly equipped and the medical staff kept in a constant state of irritation. This defect became more and more pronounced as the surgical and midwifery work increased. It was to obviate this and to facilitate and improve the clothing of the sick that, as soon as the almirahs and an increased amount of clothing were provided, a short time prior to the arrival of the Prince of Wales, I caused the Steward to make over a complete set of bed linen and clothing for each ward to the immediate care of Miss Huband and her nurses, and to Mrs. Hickie. Prior to this the nurses were responsible, under the direct check and supervision of the Steward's department, for the clothing, linen, and bedding, on the beds and patients, according to the terms of rule 5 of the regulations for the guidance of the nurses. But by the provision of almirahs it was practicable to have three changes—one on the beds and patients, one in the almirahs, and one at the wash; whilst a reserve of 20 to 25 per cent. was to be available at all times in the Steward's general store. This was the standard aimed at. Now, in stocking these almirahs there was no innovation in principle, only a larger quantity of things were kept in the hands of the nursing department in order to facilitate proper nursing, clothing, and bedding of the sick. Mr. Wade's responsibility therefore remained precisely the same as it was before. He is in error in supposing that I ever for one moment contemplated relieving him of any portion of it. It embraced the check and supervision, not only of the linen and clothing on the patients and beds, but also of those in the almirahs and at the wash. No doubt the nursing department is held responsible for the care and cleanliness of the things in the wards; but that responsibility is covered by that of the Steward, who has always possessed the direct and immediate power of exercising a close check on the supplies of clothing, linen, &c., to the different wards.

There is a somewhat parallel case in the apothecaries' department. On the increase of the surgery taking place, I found it needful, for the prompt relief of pain and the saving of life, to have a considerable number of surgical instruments and appliances always ready for emergencies close to the operating table; but Mr. Sleigh never raised the cry of non-responsibility because these things were not in the general store or dispensary.

APPENDIX C.

Dated Holm Head, Bewcastle, Cumberland, the 12th December 1877.

Demi-official from—J. EWART, Esq., M.D.,

To—J. ELLIOT, Esq., M.D., Offg. Surgeon, General Hospital.

I HAVE just received yours of the 16th ultimo, announcing the fact that I have been called upon to give my reasons for having opened the dispensary for outdoor native patients without the sanction of Government. I believe it was commenced some time in 1873 or

1874. In Dr. Cockburn's report on the Calcutta Medical Institutions for that year it is remarked in paragraph 10, page 14, that "there were 1,107 outdoor patients who received medicine and advice, and it is stated that the work of this useful department of the hospital would be very much increased were the services of the 2nd Resident Surgeon exclusively available for the hospital." In the Bengal Government Resolution thereon, paragraph 7, reviewing Dr. Cockburn's report, it is observed that "the number of patients treated at the outdoor dispensary (of the General Hospital), which has been newly opened, was 1,107 only. The Lieutenant-Governor observes Dr. Ewart's suggestion that the services of the 2nd Resident Surgeon should be made exclusively available to the hospital, with a view to promote the usefulness of this branch of the institution, but he regrets that he can hold out no hope of the concession being made. With the amount of extra assistance which is generally available at the General Hospital (doubtless referring to the services of newly-arrived Surgeons), the Surgeon-Superintendent should have no difficulty in so arranging that full attention shall be given to the dispensary." Again, Deputy Surgeon-General Francis, after a searching inspection on the 14th October 1874, remarked in the visitors' book that, among other improvements, he was particularly impressed with the opening of the outdoor dispensary.

Whether formal sanction was obtained, after the submission of my No. 258 of the 31st October 1872, for the opening of the dispensary, I do not venture to declare positively, in the absence of official or demi-official records. But I have an impression that I was to be permitted to open the dispensary after the sanction was obtained for an augmentation of the hospital establishment. One thing is very manifest from the extracts given above, viz. that the dispensary was conducted—from the period or year of opening—with the fullest cognizance and approval of the Government of Sir Richard Temple and the medical authorities. The Lieutenant-Governor, on more than one occasion in 1875, saw it in full working order, and regarded it as an essential complement to the hospital, and a means of doing a vast amount of good among the poorer classes of the neighbouring native population. He gave me a grant to improve the way to and from the hospital, and personally requested me to get Mr. Sterndale to move the Suburban Municipality to repair the continuation of the road into Bhowanipore, which was being done before my departure. I have a distinct recollection of having explained the working of the out-patient department to the Surgeon-General on his visit to the hospital on the morning of the 10th March 1876. Even if no document—official, or demi-official, sanctioning the opening of the dispensary—can be found, and in this matter I must refer you to Dr. Macleod, I am, in all fairness, justified in claiming that my action in the matter was virtually covered by the distinguished countenance and indispensable support I invariably received from the heads of the Medical Department and the Bengal Government. The slightest sign of disapproval on the part of either of these authorities must have at once led to the closing of the dispensary. Instead of this, from the inception of the enterprise to the time of my leaving, I met with nothing but encouragement to go on and prosper.

ANNEXURE II.

Dated 32, Tavistock Road, W., London, the 15th December 1879.

From—NORMAN CHEVERS, Esq., M.D., Deputy Surgeon-General, Retired List, Her Majesty's Bengal Army,

To—The Secretary to the Government of Bengal.

IN acknowledgment of your letter No. 859, dated the 18th February last, I have the honour, in accordance with the suggestion of His Honor the Lieutenant-Governor, most respectfully to submit the following remarks upon the report on the Medical Institutions of Calcutta forwarded therewith.

I may suggest that, had I been informed while the Committee were at work regarding several of the views which the Government and the Committee entertain relative to what occurred at the Medical College Hospital during my administration, I should at once have had that opportunity of explanation generally conceded to those whose acts are questioned, and should have been able to deny, by anticipation, some of the leading statements which have gone out to the service and the public in the documents under reply.

I must promise that my control of the Calcutta Medical College Hospital ceased on my retirement from the service at the end of March 1876.

The Committee have sufficiently set forth the facts that I and my colleagues, the Physicians and Surgeons, worked under a very liberal system. We considered that the wants of our patients were large; we reported those wants to the medical authorities, who, after due and full inquiry, generally obtained nearly all that we asked for from the Government. Prices gradually rose, and the cost of our supplies of food, clothing, and doubtless of instruments and medicines (although upon this latter head we had no real information) increased proportionably.

Besides this, we did consider, as the Committee have suggested, that our institution worked under exceptional circumstances. Thus we were the largest hospital for teaching in India, where a fair trial of every new instrument, every recently-introduced appliance for dressing wounds, and every approved new medicine had to be made, equally in the interests of our patients, of the sick in India at large, and of our students. Our Surgeons were men of great reputation, whose wards were constantly filled with patients who had undergone capital operations—a class of patients who, the Committee have neglected to mention, ought always to cost more than an equal number of surgical sick with broken heads and ulcerated ankles; and our Physicians' wards never received a trivial case of disease except by the merest accident.

It is consequently quite illogical to attempt to compare our expenditure under these heads with that of an institution like the Mayo (Chandney) Hospital, where there is no teaching, and where the Superintendent can go in as much or as little as he pleases for new surgical appliances and new and costly drugs.

Seeing that of late years we, as the Committee have shown (Appendix B, p. v.), always kept our expenditure within the amounts allotted for the purpose in the budget grant to charge us with reckless extravagance for dieting our patients amply, allowing them all such extras as we deemed necessary, is also to attribute extravagance to the medical authorities and to the Government, who obtained for us and granted to us liberally the means of doing conscientiously what we considered to be our duty to the sick. For my own part, I am content to share with those my seniors and superiors any blame which may be proved to be our due.

Certain medical officers, having been instructed by the Lieutenant-Governor that he feared that we were extravagant, have held inquiry (not of us), and have pronounced that we were extravagant. But this is merely the opinion of men who know infinitely less of our hospital and its wants than we did, and whose views in regard to dieting the sick are self-evidently less liberal than ours.

I venture to maintain that Dr. Green, Dr. John Murray,* Sir John Campbell Brown, I, and Sir Joseph Fayrer are quite as likely to have been in the right when we held that it was wise, humane, and even economical to feed our patients liberally, as the members of the Hospital Committee are in setting forth, as a model for imitation, the Bhowanipore Asylum, where European lunatics are victualled by the senior medical member of their Committee at the cost of 4 annas 6 pies daily (page 2), in face of Surgeon-Major Jones' declaration (Appendix C, Annexure D, p. xii.), that "our prices won't command good meat. We pay 4 annas 6 pies for mutton, and 2 annas 3 pies for beef. They" [our contractors] "give us inferior meat."

The Committee appear to have overlooked the important fact that, as a general principle, the better you feed your patients, within the strict rules of medical dietetics, the sooner they recover and are discharged, to the saving of diets. We, at the Medical College Hospital, were not men who would suffer malingering for the sake of our food.

The report contains what appear to me some very crude remarks upon the use of rum as a stimulant. It is a fact, long ago generally known to medical officers in India, that the rum which is generally supplied there is new rum, and that new rum is so unwholesome as to be almost poisonous by reason of the fusel oil which it contains. Good rum only becomes wholesome after it has been in store for about six years. I arranged many years ago to obtain our supply for the College Hospital from the commissariat, and as long as this system lasted, I gave rum freely, greatly preferring it to brandy and port wine, especially for natives. But when the further supply of this liquor was refused, I consider that I had reason to object to supply my own sick with ordinary rum.

It is very singular that, in commenting upon the increase in our European and Native diet-rates to 12 and 6 annas respectively, the Committee should remark that they "have been unable to discover any reason for this," seeing that Dr. Payne was, with myself, a member of the Committee who met at Deputy Surgeon-General Saunders' office, and concerted and advised this measure, and that our report has, doubtless, been placed on record, and would as certainly have been accessible to Dr. Payne had he desired to refresh his memory with regard to the reasons upon which he and we based our recommendations.

I am startled at seeing the following very defective statement in the Committee's report upon the Medical College Hospital, Appendix B, p. 4: "At this time" [1870] "the Examiner of Medical Accounts proposed that all expenditure should be audited, and an elaborate system of check, involving an immense amount of check work and trouble, was introduced." This may be true, but it is not what is, to myself, the most important part of the truth. The fact is that, several years previous to 1870, I, feeling that an undue amount of responsibility rested upon myself as Principal, in having the sole control of the expenses of the hospital, wrote demi-officially to Mr. Hugh Macpherson, Secretary to the Head of the Medical Department, urging that all our expenditure should be placed under check by Dr. Butler, Examiner of Medical Accounts, which was accordingly done. Not having access to documents, I cannot fix the exact date of this transaction, but I believe that it was in

* Dr. Murray carried his supervision of the Medical College Hospital to the verge of persecution, and would never have failed to object to any of our doings to which an experienced medical man could, with any ground of reason, make exception.

1864. It was certainly during Dr. Butler's incumbency, because Dr. Francis succeeded Dr. Butler in that post, and then acted for me as Principal when I officiated as Inspector-General of Jails in 1865 and 1866.

This fact is evidence that I was anxious to have our expenditure systematically checked, seeing that my action brought down upon us that most cumbrous, troublesome, and costly system of check, under which some of my colleagues were driven to the verge of mutiny, but which I endured uncomplainingly, seeing that I had invited not that expensive and unwieldy system, but some or any system of valid check.

I can by no means submit to the Committee's conclusions, if they intend them to apply to my fifteen years' administration, that "the supervision has been lax" (Report, p. 1); that "as a matter of fact he" [the Principal] "has not hitherto exercised any great control" (Appendix B., p. 2, para. 3); or to Dr. Contes's statement, that the circumstance of the medical officers leaving the power of ordering extras "entirely to their assistants" caused wasteful excess.

No member of the Committee can know much of my system of administration, save by consulting my records, except Dr. Mackenzie, then a young and inexperienced Assistant Surgeon, who worked with me as House Surgeon for a few months in 1868.

As Senior Physician, I always relied nearly as much upon diet as upon medicine in the treatment of the sick. I, as a rule, never passed the bed of one of my patients at my morning visit without carefully ordering and regulating his diet. I signed my diet-sheets once a month, looking closely to the expenditure of wine and other extras in every sheet; and I would have undertaken to maintain as I did occasionally on the Objection Statements) the accuracy of, and the necessity for, the expenditure, as shown in each diet-sheet.

With regard to the expenditure of my colleagues, the Physicians and Surgeons, I had to treat those officers with the deference which was due to their position and professional characters. I held that they were at least competent judges of what their patients' condition required. I should no more have thought of asking one of my colleagues, Surgeons whose skill and knowledge are scarcely paralleled in Europe, why he ordered champagne for a strayed native lad, whose thigh he had amputated at the hip-joint, than I should of inquiring why he prescribed calomel for another patient. Nevertheless, Mr. Bowser, the always trustworthy and vigilant Steward, had orders to watch the diet-sheets of my colleagues narrowly, and to bring them to me whenever any really unreasonable accumulation of extras appeared. This was done hundreds of times. I sometimes said, "There is nothing here that I can interfere with." In other cases, a word was said to the House Physician or House Surgeon, or very rarely indeed, to the Medical Officer; and the hint was always kindly taken, because it always drew attention to some undeniable and self-evident oversight: the mistake generally being the retention of old extras when new ones were ordered.

Besides this, the Steward used to prepare every month a comparative statement of the quantity of stimulants used by each of us, which each Physician and Surgeon duly received and attended to.

In like manner, the Apothecary worked with me in keeping down, as much as possible, the expenditure of dressing materials. The Steward frequently had the beds searched for secreted bandages, &c.; and wornout sheets and clothing were utilized in dressing as much as possible.

A great deal is said in the papers about the expenditure for champagne and cigars, cocoa, jellies, sweetmeats, pomegranates, &c. It is true that the Committee do not actually blame any one for prescribing these extras—no medical man who knows his profession could possibly do so—still the matter is alluded to at p. v. of Appendix B., in a manner which appears to be intended to invite special attention, if not censure.

I am glad to remember that I gave tobacco, jellies, and sweetmeats frequently. A cup of cocoa is often very useful to a patient on a chilly morning; and I should feel deep regret could I charge myself with having denied a pomegranate to a dying consumptive patient who begged for it.

No one in my time gave champagne frequently, or hesitated for a moment to order it when he considered that it was necessary. In giving it, I was now and then so far convinced of its value as a remedy that I sent it over from my own stock, that the medicine might be of undoubted quality.

In surgical and medical treatment, champagne is prescribed not as an article of diet, but as a stimulant and restorative, generally in cases where death is immediately threatened, as in shock and hæmorrhage. Within the last few weeks a practical surgeon has written that, in cases of amputation through the hip-joint, no stimulant is so useful as champagne. In my hospital experience I have never used champagne as an article of diet or seen it so employed by others.

The remarks which I have already made with regard to the expenditure of drugs and instruments applies still more accurately to diets. A surgeon who, like the officers in charge of the Mayo and Howrah Hospitals, has the duty of ordering and checking every diet, has it within his power to regulate his expenses with great precision. Such is not the case at the General Hospital or at the Medical College Hospital. At the latter I had the diets of my own wards thoroughly in hand; but there were four other heads of this institution—two

Physicians and two Surgeons—who, as was proper and needful, had each his independent opinion upon the proper manner of giving extras to his patients.

I have searched the papers under notice in vain for anything like a full report from the Medical Store-keeper to Government upon the question—How is it that some of us came gradually to put Government to greater expense in the purchase of our instruments, medicines, and dressings, while the average of our in-patients remained nearly at a standstill? Here I must note, in passing, that for some years before I retired, the number of out-patients at the Medical College Hospital increased largely year by year. If such a report had been obtained from the Medical Store-keeper it would, I believe, have been discovered that, while we had no reason to give up the costliest of our old supplies of medicines and apparatus, new instruments and drugs of a very expensive character have, of late years, been needed and largely allowed. Among these are preparations of phosphorus and salicylic acid, chloral, bromide of potassium, and other costly new drugs; electro-magnetic machines, galvanic cautery apparatus, Dieulafoy's aspirators, clinical thermometers, hypodermic syringes, ophthalmoscopes, laryngoscopes; the various preparations of carbolic acid, most extensively used in disinfecting the building and in surgical treatment; and Lister's dressings. These latter appliances, which were very freely adopted in the Medical College Hospital, are so costly that, a few months ago, Dr. G. Beaton published an article (*Glasgow Medical Journal* for June, 1879) on the "causes of expense in the antiseptic treatment of surgical cases," in which he writes: "I very often hear advanced against the system the charge that it is too expensive for general use, especially in large establishments."

In this way doubtless the expenses of nearly every city hospital in Europe have increased in proportion with those of the Calcutta Hospital now in question. I have made particular inquiries on this point of the authorities at the London Hospital, which is the largest hospital in the United Kingdom. They inform me that what I have stated above is perfectly accurate; and that with the most scrupulous economy, the cost of their own drugs has of late years increased at least fifty per cent.

With a view to the prevention of pilfering of drugs and other hospital property, I for years endeavoured, but in vain, to have a porter in a proper lodge posted at the street entrance of the Medical College Hospital. In Sir William Grey's time I strove earnestly to have a sum given to the hospital by Kajah Abdool Gunny, expended in this manner, but without effect.

I think that it would for self-evident reasons be well if, as is proposed in the report, indenting officers should be reminded from time to time of the prices paid by Government for instruments and the more costly drugs.

The Committee's recommendation, No. xxxi., provides that "two indents should be allowed instead of one. The first should be estimated to be sufficient for six months; at the end of that time efforts should be made to utilize the drugs remaining by substituting prescriptions containing them for other formulæ, the supplementary indent being kept as low as possible." The intelligence which evolved this plan would, it is to be feared, unblushingly offer a patient an orange as his dessert to-day, upon condition of receiving the peel as his post-prandial repast to-morrow.

In that hospital, and there only, I feel conscious of having used quinine in nearly every case in which anti-periodics were indicated. I did this because I set my face absolutely against the admission of any case of slight fever into my wards. Such cases may be treated with aces as out-patients. Consequently, all my own fever cases were serious. A little quinine (and no medical man in India gave quinine in smaller doses than I did) generally sufficed; and in this way long occupation of beds and the expenditure of many diets, which would have been incurred had I treated the patients feebly, were avoided.

I have no hesitation in urging that, should it be decided to remove all European patients from the Medical College Hospital, the Physicians' wards would be rendered quite inadequate to the great object of teaching students. I used frequently to tell my class, "You cannot learn your profession from what you see in the Physicians' native wards which are little more than receptacles for hopeless cases, quite beyond all remedy of science, and now only in want of feeding and nursing, and of those drugs which soothe pain without curing. But come into the European wards, you will there see disease in many who are not dying, and there you will be able to perceive clearly the manner in which our treatment acts upon remediable maladies."

It has been urged by the Committee, I think ungenerously and erroneously, that the medical officers of the Calcutta Hospitals have, in the pursuit of private practice, neglected their official duties, and delegated them to their subordinates (Report, p. 1, paragraph 8). I believe that I am the most competent judge on this point as regards the conduct of my brother officers at the Medical College Hospital during the fifteen years of my incumbency; and now that all personal concern and responsibility have passed away from me, I am able to assert with the utmost confidence that the Committee's imputation can have no just application to them.

I have already placed fully upon official record my opinions with regard to the structural and other defects of the Medical College Hospital. I will therefore content myself with submitting that I am unable to agree with the Committee in most of the leading views on this subject conveyed in their letter No. 63 of the 11th of June 1878.

ANNEXURE III.

No. 661, dated Calcutta, the 9th February 1880.

From—The Officiating Surgeon-General of Bengal,
To—The Secretary to the Government of Bengal.

I HAVE the honor of acknowledging receipt of your letter No. 27, dated 16th instant, forwarding communications from Drs. Chevers and Ewart, and calling for certain information and opinions as to the sufficiency of the present money allowances in the Presidency hospitals.

2. The Lieutenant-Governor is already aware that the experience of the year 1878 was entirely favourable to the new system. The records of 1879 are not yet complete, but so far as I know them, the results of practice have been no less favourable in that year.

3. The statements of opinion called for by the Lieutenant-Governor are submitted herewith.

4. Dr. Ewart's letter sets forth the strength of his conviction in favour of the costly system which he administered. In his fifth paragraph, however, he proclaims his adhesion to the unquestioned doctrine that the conservation of life and health is the primary object of hospital management. Admitting this, it is evident that, if Dr. Ewart knew how much greater this conservation has been under the new than it was under the old system, he must admit also the advantages of the change, or at least must admit that decrease of expenditure has been accompanied by increase of cure. I consider it unnecessary on this account to discuss Dr. Ewart's letter further.

5. Dr. Chevers' communication contains some remarks which require notice as bearing on questions raised in the annexed correspondence and elsewhere. Dr. Chevers objects to the use of rum, on the supposition that new rum is supplied. This he considers evidently to be a property of the spirit obtained from the Calcutta market. He distinguishes commissariat rum in this respect and prefers it to other alcoholic stimulants. This is noteworthy with reference to the opinions of his successor to be given hereafter.

6. Dr. Chevers refers to the recommendation of the Committee of 1870. If Dr. Chevers remembers the proceedings of this Committee as clearly as I do, he will not have forgotten how stoutly he maintained against Dr. Saunders that no patient in the College Hospital had, with the smaller prices, been denied anything that was desirable for him; that seeing the hopelessness of bringing the discussion to an end, I urged Dr. Chevers to accept the higher rates, for that he need not spend more money if he did not want more; and that he acquiesced only on the clear understanding that his doing so should not involve an admission that anything had been wanting before.

7. About this time expenditure on diet and extras was extravagantly increased in Calcutta, in accordance with the views of the Deputy Surgeon-General, who insisted upon it. The uselessness and wastefulness of the change were speedily demonstrated, as the history of the lunatic asylums now before the Government will show.

8. The evidence of the officers of the General Hospital is as follows:—

9. The Superintendent's letter is very explicit. I invite attention to Dr. Jones' statements regarding complaints of Resident Surgeons, the quality of supplies, and the surplus money at his command. Dr. Jones informs me that he has denied his patients nothing that was harmless. He has frequently ordered champagne when he has been asked for it, and yet his average charge for paying and non-paying patients has not quite reached the Government allowance for paupers alone. Dr. Jones tells me further that he has granted indulgences this year which could not be regarded either as adjuncts to treatment or as charitable ministrations, to avoid the possibility of its being said, even unreasonably, that his patients were stinted.

10. Dr. Nicholson has found that he could command all that was essential. Dr. Jones shows that there was no need to deny the sick anything that was useful, even if not essential, or anything in the nature of indulgence, conducive to their comfort.

11. Dr. Joubert has not found his action fettered in any way by the money limit imposed, but considers the provision sufficient.

12. Dr. Raye's letter shows that, without any assistance from less costly patients, he was, with care, able to keep a number of serious cases supplied with all they needed, without exceeding the allotted sum. He might have exceeded it without transgressing the orders of Government. It is no more necessary to keep the expenditure of a particular ward within the stated limit than it is that of a particular patient or a particular day. The principle of an average provision is ignored and its value sacrificed when the effect of numbers, of lighter cases, and of periods, is lost by subdivision and independent action. An institution should work as a whole, its parts supplementing each other. It is a function of a single controlling head to make it work in this way.

13. Dr. Cobb's statement is not very clear. He feels that he worked under a sense of restriction, but does not believe that his patients suffered any harm in consequence. He was satisfied with the quality of the provisions. His statement being in some respects at variance with the information I had received before, has been referred to the Superintendent. I append Dr. Jones' reply. It appears that the Superintendent's interference amounted to his occasionally pointing out to a very young surgeon that his practice was expensively conducted. This is a check to which the leading physicians of London hospitals are subjected by the governing bodies, and of which the former fully recognize the propriety. Dr. Jones, with abundance of means in reserve, would not have denied any reasonable latitude to his assistant.

14. Inasmuch as the patients of the General Hospital consist largely of European seamen, I think the testimony of the Port Health Officer has some value. He visits the shipping daily, and opinions are expressed to him with perfect freedom on board. I append Dr. Lynch's statement, and invite attention to his remarks on milk. His letter, so far as it goes, is a direct communication from hospital patients.

15. The adequacy of the money allowance has been severely tested in the General Hospital by the class of cases admitted during the past year. Formerly it was the practice to receive and treat all comers in the wards so that a large number of beds were constantly occupied by trifling cases which would not have been admitted into any hospital of Europe. This is the explanation of the low general death-rates recorded in former years in this hospital, which are in fact not hospital death-rates at all, many of them being little in excess of the rates among the general populations of towns in Europe and much below those of some Indian towns. To the correction of this abuse of charity the present Superintendent has addressed himself. Something was done in 1878, but this year was fairly comparable with its predecessors in respect of quantity of disease as distinguished from number of cases. In 1879 all cases not requiring in-door treatment among the resident population were refused admission. From the shipping some light cases were received on order, but the number of these was very far short of the totals of other years. Yet with this fundamental difference of reckoning, with fatal dysentery unusually prevalent among seamen, and with a number of moribund children included, the general death-rate in the wards did not exceed the average of the most expensive years. In 1878, the other year of the new administration, the rate was the lowest on record, with trivial cases resembling in number those of former years. The figures are as follows:—

Death-rate per thousand of persons treated.				Death-rate per thousand of persons treated.			
1871	...	...	36.52	1876	...	...	44.8
1872	...	...	45.30	1877	...	...	40.5
1873	...	...	38.90				
1874	...	...	45.95	Average	...		43.7
1875	...	...	58.17				
Average	...		44.9	1878	...	...	33.0
				1879	...	...	45.0
				Average	...		39.0

The proper exclusion of trivial ailments from this hospital may lead to higher death-rates in future years. It is only by such correction that the general rates can come to deserve a place in hospital statistics. Allowance will continue to be necessary for the admission of seamen not seriously ill.

16. With regard to the Medical College Hospital, I annex statements of opinion from Drs. Smith, Charles, Macleod, and Chundra, and from Dr. Coates on the experience of 1878.

17. The daily average cost of diet, &c., in this institution in 1879 was 6 annas $7\frac{1}{2}$ pies. Dr. Smith reconciles this fact with a belief in the inadequacy of the sanctioned 8 annas by saying that the latter has not been reached in consequence of the fear of exceeding it. This argument is not very intelligible to me. Dr. Smith must have known after a month's work that he had a margin to spare, and, seeing that this margin was equal to one-fifth of the sum expended, the reserve for contingencies was considerable.

18. Dr. Smith's idea of the price of meat suitable for the sick is based on a misapprehension. The kind of meat he proposes to purchase is not considered by other medical officers fit for hospital use. The matter is well explained by Dr. McLeod. The meat called "first class" in the market consists largely of fat, and the loss by bone in the choice pieces would also be very great. Soup and beef-tea could not be made from such meat. There is no reason why meat of suitable quality should not be supplied to the Medical College, as it now is to the General Hospital, without exceeding the money allotment.

19. I observed some time ago that rum was supplied to the Medical College Hospital by the bazar contractor at Rs. 14 per dozen, which is three-and-a-half times the price of commissariat rum. I objected to this, and Dr. Smith replied that he had examined three samples of rum, and had found the contractor's the best and the commissariat the worst of them. This was opposed to common experience, and I requested that the latter might be used. The change was made in the middle of December. Dr. Smith is dissatisfied with the rum now issued, as distinguished from that obtained from the contractor, and would prefer brandy.

20. It will be seen that the trials of rum in the College Hospital have led to the following verdicts:—Dr. Chevers preferred commissariat rum to other alcoholic stimulants. He considered market rum unfit for the sick and, when he could no longer obtain a supply from the department, he ceased to give rum of any kind to his patients. Dr. Smith finds market rum the best, and when he is supplied with commissariat rum pronounces it unfit for most of the sick. Dr. Chevers doubtless knew that the commissariat supplied old rum alone. Dr. Smith says their rum is new. I quote the words of the Executive Commissariat Officer's reply to a direct question put to him by me a few days ago:—"Old rum is always issued; there is no difference in that issued now and seven years ago;" that is to say, the spirit supplied to Dr. Smith is the same as that supplied to Dr. Chevers.

21. These opinions, as they are expressed by the officers, are actually inverted. The antagonism, however, may not be so absolute as this. Dr. Smith may have obtained better rum in the market than Dr. Chevers could find there, and may thus explain the difference in this respect. His condemnation of commissariat rum might be reconciled with Dr. Chevers' approval of it, if his statement, that new spirit is now issued, were true. But Dr. Smith judges by flavour and, wrongly supposing the rum to be new, condemns it.

22. Dr. Smith is dissatisfied also with the milk supplied to his hospital. His testimony is opposed to that of Dr. Lynch concerning the General Hospital, and more pointedly to that of Dr. Cayley at the Mayo Hospital. The merits of a system can only be tested where it is fairly administered. There is no evidence on a question of money sufficiency where an officer pays more than three times the price he need pay for rum, and complains that good milk is too dear to be bought; where he accumulates on European diets, month after month, a sum equal to one-fifth of the money he spends, and says at the end of the year that he would have liked to order "certain creature comforts and

little delicacies," which, "under the present system, he had refrained from giving." Here "system" must mean management, not money limitation, for the latter is not involved.

23. There can be no more real difficulty about the supply of milk at the Medical College than there is elsewhere. It is well known that six seers of pure milk can be bought for a rupee. At the Mayo Hospital and the Lunatic Asylum cows are milked on the spot and this is the price. If eight seers are obtained at the College, then at least two seers of water are bought with the milk and, for the sake of quantity, diluted milk is given to the patients. This again is a question of management, not of money. Two pints of the college mixture contain, say, a pint and a half of milk. Why cannot the latter quantity of pure milk be given at six seers instead of the former quantity of milk and water at eight seers. The patient will benefit and the cost will be the same.

24. Dr Charles agrees generally with Dr. Smith but says he has had many complaints in his ward, which is opposed to the statement of the Ladies' Committee and the matron as to recent occurrences. An unprofessional statement would have no weight against that of Dr. Charles in a matter of opinion, but here the question is one of very simple fact, it is whether the patients in hospitals have or have not made reasonable complaints of late.

Dr. Chundra agrees generally with Dr. Charles.

25. Dr. McLeod deals minutely with the matter of meat supply. His opinions are those of medical officers of large experience here, whom I have consulted on the point.

26. The Superintendent, Municipal Market, writes as follows on the subject:—"I beg to state that good wholesome meat (not first class fattened meat or choice parts) can be purchased at the Municipal Market at the following rates: mutton eight annas per seer, beef four annas per seer. The mutton (legs and forequarters) procurable for eight annas per seer is young mutton quite sound and well-flavoured, but not fat (second class). First class mutton is not sold by weight, but by pieces. First class beef (rounds and chukrib) is sold at four annas per seer, and second class at inferior rates. *These are retail prices.*"

27. With regard to rum, I have pointed out to Dr. McLeod that the power he desiderates of ordering brandy in exceptional cases is explicitly conceded to him in paragraph 5 of the Lieutenant-Governor's Resolution on the Committee's report. He has expressed himself satisfied, and adds that he does not expect to use other stimulants often. Dr. McLeod has found rum occasionally cause vomiting, a common effect of alcohol in any form, and one which is very inconvenient in medical practice. He lays stress on the purity of the spirit. If alcoholic purity be the test of medicinal value, there is assuredly nothing in the market equal to commissariat rum, for the department will issue old rum of proof strength on a medical officer's requisition.

28. Dr. Coates expresses his belief that the present Government allowance is more than sufficient, and shows that the costliest and most luxurious of stimulants is obtainable on occasion without exceeding the allowance. He ordered champagne when he wished to do so.

29. Dr. Pilcher is unable to give precise facts concerning the Howrah General Hospital, his books having been detained in court. His patients are of mixed classes—paying and pauper. He writes: "As far as I have gone, I do not think the average cost of our diets is above eight annas a head per day, but I cannot be sure till the actuals of every month are added. The chief question I can answer at once. I have never felt, nor has any officer under me felt, restrained in the ordering of any kind of diet or extra which was thought needful or necessary for the patients, whether European or Native, treated in the hospital. Recent orders of Government have drawn our attention to the various questions regarding hospital expenditure, but ours did not require alteration, and these orders have not affected our practice in any way."

30. Dr. Mackenzie reports the experience of the Police and Campbell Hospitals, and satisfactorily disposes of the complaints of two of the native officers serving under him. The average cost of diet and extras was much below the allowance. Excluding the small-pox wards, the charge was 2 annas 4-8 pie per patient, and including native small-pox it was 2 annas

8.4 pie. Small-pox mortality was in the first quarter of the year exceedingly heavy. In 1879 cholera cases were for the first time transferred to this hospital from cooly depôts. Dysentery was peculiarly abundant and fatal. Yet, notwithstanding these special causes, the death-rate of 1879 did not rise to the average of the years 1871 to 1877. It was 260 per 1,000 treated against an average of 267.

31. It appears that the allowance of eight annas for an European suffering from small-pox and entirely dependent on hospital supplies may hereafter be insufficient. It has not been so hitherto, because patients of a higher class have been admitted who have been supplied from home, and have thus left a margin at the service of the Superintendent of the same effect as that afforded by the lighter cases of illness in a general hospital. If there should be no such margin, the allowance may be exceeded. This is intelligible and quite in accordance with the prescribed system. Should necessity arise, I shall not hesitate, pending orders, to pass charges in excess of the allowance. For seamen, I conclude, Dr. Mackenzie will draw in future the daily sum paid elsewhere from the Port Dues Fund.

32. The prices mentioned by the Teacher of Medicine would cause some astonishment among people who have knowledge of the markets.

33. The opinions of the ladies who govern the Hospital Nurses' Institution and Canning Home are valuable as those of competent judges of the quality of food. They are in close accordance with the opinions which I have heard privately expressed during the year. An important point is the testimony borne by these ladies to the superiority of the present supplies over those of former years, and another is their evidence on the complaints of patients.

34. In Dr. Cayley's statement, the point which bears most directly on the questions at issue is that, with an average cost of 2 annas and 8 6 pie per patient, he is able to supply pure milk and to use it freely. Dr. Cayley has been careful to avoid error from patients supplying their own food by excluding them from his reckoning. Dr. Macleod notices this possible error at the Medical College, but considers that it does not affect the question of a sufficient allowance. He would find his belief much strengthened by Dr. Cayley's experience. The relief derivable from this source will be felt in future as in past years.

35. Among the many points of practice on which medical opinions differ, there is none on which the difference ranges so widely as the use of food and stimulants in disease. Between the gratification of every fancy, with the almost perpetual administration of food and stimulants on the one hand, and restriction to the bare requirements of life on the other, there is no stage or degree that has not its advocates, who are unwilling to admit the equal merits of any other practice. It would be strange indeed if on such a question as that now before the Government, there should not appear differences of opinion among medical men who have been invited to express themselves freely and from a purely professional point of view. That such differences have not led to stronger objections to the present system shows how great a variety of practice that system permits.

36. Still differences of opinion exist, and the question of sufficiency, which is at its root a question of fact, must be settled on the evidence of facts. I have examined the results of treatment under the new and old systems in two of the three Government hospitals, and found them to be better in the last two years. The returns of the other institutions have not yet been received. Those medical officers therefore who have found in the existing system full provision for everything they wished to use, have the best possible assurance that their patients have had all that was good for them. Those who have thought themselves restricted must see that nevertheless their patients have fared better than under the former lavish expenditure.

37. Further, in all the hospitals there has remained a liberal money balance at the end of the year. If, therefore, any medical officer should hereafter wish to exceed his past expenditure, he will be able to do so without

exceeding the allowance; or if he is not so enabled, the hospital management will have to be vindicated before the allowance can be found wanting.

38. In addition to the provision of all that is actually necessary for sick people, it is at times a scarcely less imperative duty to provide little comforts and indulgences which do not affect the course of disease, but which cannot be excluded from the dispensation of charity. The occasions for these indulgences are not many and the total cost is trifling. The denial of them, if ever they really were denied during the past year, is to my mind inexplicable with a cash balance always in hand.

39. On the evidence of the past two years, I am not prepared to recommend that any change be made in the general provision ordered by Government for the sick in the Calcutta hospitals. The circumstances of the European Small-pox Hospital are peculiar. Patients are admitted of all classes; persons who otherwise would not resort to an hospital at all, wisely subject themselves to hospital discipline here for obvious reasons; sailors form a large proportion of the patients; and paupers perhaps a smaller proportion than in any other hospital. From this it follows that an average cost of diet reckoned on the whole number has no meaning. The method of graded paying-patients and payment for sailors in use in the General Hospital is well suited to the case. In ordinary years, however, the admissions to this ward are few; and as, at the same time, a general average allowance is unsuitable for the European patients, I would suggest that the rule in force elsewhere be not considered to apply to these patients, and ask to be allowed to dispose of any requisitions of the Superintendent, from time to time, on their merits without reference to rule.

40. The permission may be extended to the native small-pox ward in case of need, but I think the need will be rarely felt. Here the sick take their place among the more expensive cases of the hospital in general and, as there has been evidently abundant provision for the whole, it is unlikely that any requirements of the small-pox ward will so greatly disturb the average as to call for further provision. The exceptional circumstances will be the concurrence of a large number of small-pox cases with a large number of expensive cases in the general ward, when the former may require separate provision. This concurrence, however, took place in 1878, and the average cost of patients did not reach the Government allowance.

I believe that the experience now obtained will bring further improvement in hospital management and secure the co-ordination of work without which the means cannot be rightly adjusted to the ends, and with which no medical officer need be left without means of gratifying his kindly inclinations in addition to supplying the actual wants of his patients. That attention and thought are required for such adjustment is certain, and the difficulty of securing even a little effort of thought for each sick person constitutes the main difficulty of the head of an establishment where native colleagues are concerned. Dr. Mackenzie informs me that, when he draws the attention of a teacher to the expenditure of his ward as higher than that of others, the result is very disheartening. Instead of selecting the cases for which extras may be no longer required, the medical officer issues a summary order to his assistant to strike off a certain number of extras and makes reduction without reference to particular requirements. Dr. Mackenzie has observed also that during the few days which have elapsed since the annexed letters were written, there has been rapid increase of expenditure without any change in the cases to account for it. There are radical defects here showing apathy and indifference much to be regretted in the interests of the patients and from their effect on the pupils of the largest school for hospital assistants in India. It is useless to look for improvement in the conduct and practice of this class, which have been very severely condemned by Civil Surgeons and others, until their teachers shall confirm the precepts of the lecture-room by example in the wards.

Improved hospital administration is a valuable educational result to be expected from the attention which has lately been given to the subject. In preparing medical officers for the service of the public, it is as necessary to show them the proper management of a hospital, as it is to teach them the uses of drugs.

No 308, dated Calcutta, the 16th January 1880.

From—SURGEON-MAJOR J. JONES, M.D., Surgeon-Supt., General Hospital,
To—The Surgeon-General of Bengal.

In reply to your letter No. 149, dated 12th instant, I beg to state that during the past year I have found the maximum limit fixed by Government for the cost of diet and extras for European sick sufficient to supply them with everything that I have thought necessary or advantageous to them, from a solely professional point of view.

2. I send replies from both the Resident Surgeons: not one of the four Resident Surgeons that have been attached to the hospital during the year have made any complaint to me of the insufficiency of the allowance.

3. No instance has occurred in which considerations of economy have prevented me, or as far as I know, those serving with me, from ordering a patient anything that has been thought conducive to his recovery. There has been a reserve of more than Rs. 5,000, which I could have drawn upon had I felt the necessity of doing so.

4. The quality and quantity of the articles supplied to the sick during the year have, I believe, given general satisfaction, and no reasonable complaints have been heard from the patients which I could connect with restriction as to means.

Dated Calcutta, 14th January 1880.

From—SURGEON F. C. NICHOLSON, Second Resident Surgeon,
To—The Surgeon-Superintendent, Presidency General Hospital.

REFERRING to your letter of to-day's date, forwarding letter No. 149 of the 12th instant from the Surgeon-General of Bengal, I have the honor to submit the following replies to the questions asked therein.

2. I believe that the maximum limits fixed by Government for the cost of diets, extras, &c., has been sufficient during the past year to supply the patients treated in hospital with everything that was absolutely necessary in this respect looked at in a solely professional point of view. It is not, I believe, possible to keep the expenditure day by day under the prescribed limit, as the kind of cases treated in hospital varies, sometimes the proportion of bad cases being very high for some days, while at others it is very low. But taking one day with another throughout the year, I think the limit fixed is sufficient to meet the essential requirements of such patients as are treated in the General Hospital.

3. In no instance have I had to deny anything that was considered to be essential to the recovery of a patient for motives of economy.

4. The quality of the food supplied has been very good, and I think on the whole much superior to that supplied in former years. I hear very few complaints about the quality of the food. Regarding the cooking, however, complaints still are occasionally made.

MEMORANDUM.

From some months' experience of working the diets of the patients under my charge within an average maximum limit of 8 annas daily, I have arrived at the following conclusions:—

1. That it was quite possible to keep within the above average maximum limit for diet and extras, exclusive of ice, and at the same time to order everything that I thought necessary for the patients under my charge from solely a professional point of view, such cases being all medical ones. During certain months of the year there are admitted into the medical wards large numbers of patients suffering from acute febrile diseases, whose diets during the greater part of their stay in hospital can be provided at a cost much below the maximum limit fixed by Government. The saving effected in these cases enables the prescribing officer to add freely to the diet of other bad or chronic cases, few in number in comparison, whom it would be difficult to provide for within the limit of 8 annas daily.

2. In no instance have I considered myself prevented by considerations of economy from ordering any patient under my charge anything that I thought conducive to his recovery.

CHARLES H. JOUBERT, M.B., LOND., F.R.C.S.,

Dated 15th January 1880.

Offg. First Resident Surgeon, Presidency General Hospital.

Dated Calcutta, 24th January 1880.

From—SURGEON-MAJOR D. O'CONNELL RAYE, Offg. 2nd Surgeon, Medical College Hospital,
To—The Offg. Surgeon-General for Bengal.

IN reply to your letter No. 292 of the 22nd instant, I have the honor to state that since my return from Europe to the General Hospital I have found the provision made for the dieting of the sick to be sufficient, but not more than sufficient. My wards were abnormally empty during the past two months, containing only some two or three and twenty cases daily. These were almost all serious, requiring varied diets. It required therefore constant watchfulness to prevent the cost of diet and extras exceeding the sanctioned rate, and on several days, even with the utmost care, the cost did actually exceed 8 annas. On the majority of occasions, however, it was below that price, and taking one day with another, 8 annas was found to be sufficient for all purposes.

At other seasons the remainder of the beds would be occupied by milder cases requiring less expensive diets. The price of such diets would be a set-off against the cost of dieting the more serious cases, and should leave a margin for exceptional expenditure. This has, I am told, actually been the case on the working for the year.

In my brief experience in the surgical wards of the Medical College Hospital, I have found the provision now made for dieting and extras satisfactory. I learn, however, quite recently on making enquiries that it is a common practice, especially in the native wards, for patients to supplement the hospital diet by purchasing food or by having it sent from their homes. Such a practice materially interferes with the possibility of forming a correct opinion as to the sufficiency of the diets actually supplied from the hospital.

My impression is that the sum allowed per head is sufficient, even if all external sources of supply were cut off, for I find that the price of the diets, as entered in the daily diet-book, is below the sanctioned scale.

I have not in either hospital been prevented by motives of economy from ordering whatever I considered essential to the recovery of my patients; at the same time I think it right to mention that I have not ordered luxuries, and consequently I have been using stimulants much less freely than in former years.

I inspected the raw articles of diet at the General Hospital. I also from time to time saw the cooked diets distributed in the wards. The quality and quantity were satisfactory.

There is no inferiority in the quality of the articles now issued in the General Hospital as compared with those given in former years: on the other hand there is unquestionably a great improvement in the cooking.

Having but recently joined the Medical College Hospital, I am unable to make any comparison between present articles of diet and those previously issued.

Dated Hazaribagh, the 25th January 1880.

From—SURGEON R. COBB, late Officiating 2nd Assistant, General Hospital,
To—The Officiating Surgeon-General, Bengal.

IN reply to your No. 293, dated the 22nd January 1880, I have the honor to say that in my opinion the provision made for the supply of diet and extras to the sick in the General Hospital while I was the Officiating 2nd Assistant at that institution was in some respects inadequate, or at least not altogether suitable. On some occasions cases have come before me in the General Hospital in the treatment of which I thought that had greater latitude been permitted me, it would have been of advantage to the sick. Instances have occurred to me in the General Hospital in which considerations, I will not say of economy, but of the necessity of adhering to the standing orders of Government, have prevented me from ordering things which I thought would perhaps be conducive to the more speedy recovery of my patients. In confirmation of this general statement, I may explain that on some occasions I ordered articles of diet, the order for which I was subsequently induced to withdraw on the representation of the Superintendent that I had in these particular instances exceeded the sanctioned dietary allowance. But I am not for a moment prepared to assert that a single instance occurred in which I can say that actual harm resulted to any one patient in consequence of the regulations in force. The qualities of the articles supplied almost always gave me satisfaction. In the few instances in which it was otherwise, a report of the fact to the Superintendent was found to be a means of efficient and speedy remedy. With regard to the quantities, when a patient's condition was such as to render adherence to the standard scales of diet desirable, I think they were sufficient, and they then gave me satisfaction. This remark applies more accurately to the "full diet" scale, but I must confess that I have sometimes felt myself somewhat restricted in the matter of extras, and in the arrangement of special diets; cases occasionally occurring for which I did not consider the "full diet" suitable, nor the other standard diets quite adequate.

I find a difficulty in now speaking in any but general terms. Had these enquiries been made of me at the time I held the incumbency I should have been able to detail the precise instances which have conveyed the above general impressions, but I regret I am unable to do so now. On more than one occasion I have expressed these views in conversation to the Superintendent of the General Hospital, though I never felt that any formal representation was necessary.

Dated Calcutta, the 29th January 1880.

From—SURGEON-MAJOR J. JONES, M.D., Surgeon-Superintendent, General Hospital,
To—The Surgeon-General of Bengal.

WITH reference to your letter dated the 20th instant, and its enclosures from Dr. Cobb, I beg to state that I have no knowledge of any orders of his having been withdrawn in consequence of a representation from me.

2. It is true that occasionally when he exceeded the Government allowance I drew his attention to it, but I do not see how this is to be avoided in the superintendence of any public institution unless the expenditure is to be uncontrolled and unlimited.

3. I do not recollect his ever stating to me that the allowance was insufficient to provide the sick with what was necessary for them. The standard diets he refers to are those ordered for military hospitals. They have been well considered by very competent authorities, and have been thought both suitable and sufficient.

No. 31, dated Calcutta, the 15th January 1880.

From—DR S. S. LYNCH, Offg. Health Officer of the Port of Calcutta,
To—The Offg. Surgeon-General for Bengal.

SINCE I have been acting as Health Officer of the Port, I have made it a practice, when speaking to sailors who have been in the Calcutta hospitals, to question them as to their treatment there. I have enquired also from the Commanders of vessels what their impression was as to the manner in which their men are treated in these hospitals. Captains of merchant ships have a varied experience of such institutions in different parts of the world. As a rule they are not friendly critics of the Calcutta hospitals, as they think their men are apt to stay too long in them. I have, however, heard but one opinion from them as to treatment, which they admitted to be as good as in any other part of the world.

When I have spoken to the officers of ships who have been sick in hospital here, they have had no fault to find with amount or quality of the diets. I have heard one mate object to the way in which his food was served; but again quite recently I have heard another officer speak in praise of the way in which the patients were allowed to sit down to table when on full diet, and be helped from a joint as much as they could eat. These officers have also told me that when they required more to eat, the medical officers ordered them extras on their asking for more.

The opinions of men before the mast have been quite free and outspoken on the subject of their food in hospital. One young giant to whom I spoke lately replied—"plenty of food," and the broad grin on his face when asked about his appetite in hospital left no doubt as to the satisfaction of its demands.

I have made particular enquiries about the quality of the milk given to the sick—that sure test of honest supervision and distribution—and have always been told that it was good.

No. 632, dated Calcutta, the 17th January 1880.

From—SURGEON-MAJOR D. B. SMITH, M.D., Principal, Medical College,
To—The Surgeon-General for Bengal.

WITH reference to your letter No. 149 of 12th January, I have the honor to submit the following reply.

2. The maximum limit for European and Native diets (inclusive of all extras and stimulants) fixed by Government in its Resolution of 25th January 1879 at 8 annas and 3 annas 6 pies respectively has during the past year not been exceeded.

3. The injunction of Government that "Medical officers should, if possible, work below these limits," has also been acted up to.

4. As a matter of fact the daily average cost of diet, including extras and stimulants, for our European sick has amounted to 6 annas 7½ pies; whilst the daily average for Natives was 3 annas ¾ pie.

5. The following questions now arise:—

(a.)—Whether everything that was necessary or advantageous to the sick has been supplied to them?

(b.)—Whether in any single instance anything conducive to the recovery of a patient has on considerations of economy been withheld from him?

(c.)—Whether the quality of the supplies has been satisfactory?

(d.)—Lastly, whether any reasonable complaints have been made by the patients which could be considered fairly attributable to the limitations laid down by Government?

6. In submitting replies to these questions, it must be borne in mind that our present contract rates for mutton, beef, and milk have been respectively 8 annas, 4 annas, and 2 annas a seer, and that first class meat and milk cannot be obtained at these rates, but supplies of second rate quality only.

7. Hence the first question resolves itself into this: Are meat and milk of second rate quality to be considered as all that is "necessary and advantageous to the sick?"

8. I myself am inclined to think that such is not the case, and that even the best mutton, beef, and milk obtainable in Calcutta at 12 annas, 6 annas, and 2 annas 8 pies respectively are in no way too good for the sick in a public hospital, or reasonably to be regarded as needless luxuries.

9. With regard to the second question. From considerations of economy the best meat and milk have certainly been withheld from all the patients; but barring the effect of such a general restriction, I personally have not withheld from any individual patient what seemed to me immediately necessary for his recovery.

10. As to the third question which refers to the quality of the rations, I believe that by constant trouble and close supervision we get supplies as good as can be expected at the rates above noted. But after all neither the meat nor the milk is what I should call really good, and therefore they are not altogether satisfactory.

11. As regards the fourth question, patients have not unfrequently complained of the quality of the food supplied. Such complaints have always been carefully enquired into and as far as possible rectified.

12. All the rations as they are brought to the hospital, and all the food as it is served out to the patients in the wards, are every day carefully inspected by the steward and also by one of the resident medical officers. The cost of diets is looked into and initialled daily by each of the surgeons and physicians; and I may add that I often myself look at the rations, and have carefully tasted the food when cooked, so that any opinions expressed in this letter are based upon direct and careful observation.

13. Personally I do not think that rum is a sufficiently good stimulant for most of the cases that we receive into the Native medical wards—cases in many of which there is immediate danger from exhaustion, and where life may often be saved by well-judged stimulation. The rum now served out is new spirit, and it is, in my opinion, unsuitable for such cases. I should wish, as a rule, to give brandy in its stead, and the total annual difference in cost would after all be very inconsiderable. I have heard it argued that rum "is good enough for natives," and that it is "much better than anything they are accustomed to." By parity of reasoning, it might be considered wrong to give them medicines of really good quality, to say nothing of a scientific dietary, the ministrations of nurses, the supply of beds and blankets, and the general comforts of a hospital, to all of which they are more or less unaccustomed at their homes. I cannot for a moment believe that Government would endorse or permit any system based upon such a specious and pernicious argument as the above.

14. On the whole, great trouble and care have been taken during the past year in the College Hospital to keep within the limits and orders of Government, and I believe with all the success that could reasonably be looked for.

15. The present dietary system is certainly less complicated and cumbrous than the old one. It is much more easily subjected to constant check and audit, and in these respects it is a decided improvement on what formerly held good. At the same time it must, I think, be confessed that the only reason for our not having fully worked up to the maximum limit defined by Government was the fear of exceeding it.

16. I should like to see meat and milk supplied of the best quality obtainable in the local market (which after all is not so good as the English standard upon which rest the calculations of the physiological value of our dietaries, furnished in my letter No. 151 of 29th May 1879).

17. I should like to prescribe brandy instead of rum in all serious cases in the Native wards.

18. I should often like to order certain creature comforts and little delicacies which under the present system I have refrained from giving.

19. All this, I believe, could with care be done systematically, and with the utmost advantage to the sick, if, instead of the present rates, we were allowed 5 annas and 10 annas for Natives and Europeans respectively.

20. Such are the conclusions which I have arrived at from the experience of the past year.

I COINCIDE generally in Dr. Smith's remarks. I would like to add that very many of the patients have complained of the diets since the allowance was reduced; and looking at the question from a more broad point of view than the one that looks at every item of diet as being or not being absolutely essential to save a life, I would be glad to see the sanctioned allowance raised to the limit advocated by the Principal.

T. EDMONDSTON CHARLES, M.D.

HAVING been in charge of the Second Surgeon's wards from 1st April 1874 to 14th June 1875, and again from 3rd April 1879 to 31st December 1879, I am in a position to record my experience respecting the success of cases and operations treated and performed under the old and the new systems of dieting. The fact is indisputable that patients have made much more satisfactory recoveries, and operations been followed by better results, in the latter than in the former period. One very potent factor has no doubt contributed largely, if not wholly, to this satisfactory result, namely, the more general and careful use of antiseptics, by

which "hospitalism" has almost been abolished; still the truth remains that the better results have been obtained under the less liberal system of dieting and lower scale of allowance for food and stimulants. Sores have healed kindly, wounds and fractures united speedily, and operations been successful; while in 1874-75 results of treatment were often heartbreaking under the most energetic and lavish use of all kinds of nutrients and stimulants. I can conscientiously aver that I have not withheld from any patient what I considered essential for his recovery; and in every case which ended unfortunately, I was always able to ascertain a cause quite unconnected with the use of any particular diet or stimulant. As far as the surgical wards are concerned, I consider the present limits sufficiently liberal. Some of the native sick diet themselves in whole or in part, and I suspect that from this cause the average stated in the Principal's letter is a little below the actual cost of the food consumed; but a certain proportion of the native sick always will supply themselves with food from outside. I have only had two complaints made to me since I joined the hospital of inferior and insufficient food. I examined the ration in both cases, and failed to convince myself that the complaints were well-grounded. Both patients improved greatly in health while in hospital, and left it perfectly recovered. The present diet suffices not only to maintain the physical condition of patients, but is competent to improve it. Of this I have had abundant evidence. I agree with Dr. Smith that the rum in use at present is not suited for weak stomachs, and I have found it set up vomiting. On the other hand, I have seen it help a man out of profound collapse. I should like to have the power of ordering brandy for natives occasionally. I find it necessary very seldom to give alcohol to this class; but there are cases—of obstinate hiccup in prostration for example—in which the purity of the spirit is of great importance. I desire to offer a few remarks on the price of meat and milk, regarding which I have gained some knowledge as Health Officer. The higher rates quoted by Dr. Smith are retail rates given for particular joints (sirloins of beef and saddles of mutton) of fattened animals. I do not consider this kind of meat the best for the sick; indeed, I believe "prime" meat would not agree with a delicate stomach. Certainly, for making beef-tea it is quite unsuited. Good second class meat is, I consider, that best suited for hospital use; second class mutton is younger and tenderer than first class (though not so fat); and second class beef, if carefully selected, can be procured of excellent quality (though not very fat) at the rates at present given, namely 2 annas per pound. This is the price which the Peninsula and Oriental Company pay for it, and the Calcutta schools; while for mutton the usual price paid by such institutions, when carcasses or large parts of carcasses are bought, is 3 annas 2 pice per pound.

I am therefore of opinion that the meat most suited for the sick can be obtained at the (contract) rates quoted. As regards milk, pure milk is not to be had in the bazaar at any price; nowhere in fact, except direct from the cow's udder. The only way to obtain pure good milk is to have the cows brought to the hospital and milked there by trustworthy agents. The retail rate of milk so obtained is six seers per rupee. A contractor for large supplies should give it somewhat cheaper. The milk now in use (eight seers per rupee) is fairly good—as good, I suspect, as can be got under the system, and short of having the cows brought to and milked at the hospital. I entirely agree with Dr. Smith that the present system of dieting is much simpler, more easily worked, and gives greater power of control and check than the old.

K. McLEOD, A.M., M.D.,
1st Surgeon.

The 20th January 1880.

I AGREE generally with what Dr. Charles has recorded.

The 21st January 1880.

R. C. CHANDRA.

Dated Cuttack, the 26th January 1880.

From—SURGEON-MAJOR J. M. COATES, M.D., late 1st Physician, Medical College Hospital,

To—The Officiating Surgeon-General, Bengal.

In reply to your office No. 291 of 22nd instant, I have the honor to report that the maximum limit for the cost of diet and extras of native and European sick was never reached, though I ordered everything that I considered the patients really required.

The average amount sanctioned could not well be reached seeing that there were many patients whose sex, age, and condition prevented their taking in and digesting the full quantities sanctioned, and these left a large margin for the few who might possibly be thought able to digest more than the allowance.

I declare most solemnly that I was not influenced by economy to withhold any requisite from any patient. My bed-head tickets will show that I even gave champagne where I thought it necessary.

Finding that hospital assistants were left uncontrolled in their orderings of diet and extras, and that in their inexperienced judgments and easy indifference they gave amounts far beyond the digestive powers of any man, sick or healthy, and that they often gave whatever the capricious tastes of the patients demanded, I instituted a special dietary founded on,

and somewhat above, that of the London hospitals, and ruled that wherever this diet was not suitable or sufficient, the medical officers should make one in which there was to be no limit as to quantity or variety. No article ordered under these conditions was ever withheld or refused on any ground whatever.

After many months' trial the matter was reconsidered by Government, and orders were passed for still higher rates than those reached by the medical officers under the above plan; that is, where they had to control it themselves.

The quality and the price of every article of supply were settled by the hospital staff sitting in committee with Dr. Irving, the then Surgeon-General, presiding. Every officer saw and was asked to taste the articles presented by each contractor at the prices noted in his tender, and the committee chose whichever they preferred.

The Resident Surgeon passed the diets every morning, and rejected them and fined the contractors as often as their articles were of inferior quality. The steward brought up for decision other articles which were similarly dealt with. The patterns of all such articles as could be preserved were kept to compare these supplies with, and these articles were signed by Dr. Irving at the committee, so that no mistakes should occur.

I had only two, or at most three, complaints as to quantity, and these were invariably that the complainant had not had his *fair share*. The order to have these diets weighed out to these men in future at once settled the question; otherwise I had no complaints as to quantity.

There were some complaints by the Eurasians, chiefly that they could not get fried articles twice a day, because there was not ghee enough to do so. This was remedied at the time. It never occurred under the succeeding orders of Government. It only occurred in my own full diet scale.

The quantity then was sufficient, as the amounts ordered were never refused, and the quality was such as chosen by the hospital staff, and kept up to that by the daily inspections of the Resident Surgeon. Personally I examined the cooked food at the hours of distribution always in the morning, and three or four times a week in the afternoon; and I know it was not inferior nor in any way different from that supplied in the year previous.

No. 94, dated Sealdah, the 22nd January 1880.

From—S. C. MACKENZIE, Esq., M.D., Supdt. of the Campbell Medical School and Hospital,

To—The Surgeon-General for Bengal.

WITH reference to your letter No. 149 of the 12th instant, I beg to state that I have found the maximum limit allowed by Government for the cost of diet both in the Campbell and Police hospitals of this city to be more than sufficient. I have not, however, found it to cover the cost of the expensive extras which we are obliged to give our small-pox cases when suffering from the disease in a severe form. The supply of food from hospital in most of the European and Eurasian cases has been only supplementary, as they have generally preferred to obtain from their houses the extras above-mentioned. In this way the diets of the European Small-pox Ward cost on an average per head during 1879 annas 7 and pies 3.93, that is, reckoned on the total number; and they have had every thing it was desirable to give them. The majority of native small-pox cases have depended entirely upon the hospital for food, and during 1879 each patient cost on an average annas 2 and pies 11.83 per diem.

The reason of this amount not being much higher was that the Deputy Superintendent utilized in the ward surplus food from the general wards which would under ordinary circumstances have been wasted. It is not certain if in future years any waste may occur in the diets of the general wards as happened during 1879, and we may have no margin for excess in the small-pox ward.

No considerations of economy have prevented me, or those under me, from ordering any extras considered necessary.

There has been, as is to be expected in every large institution in India, occasional complaints from the Deputy Superintendent and other officers of the hospital staff regarding the inferior quality and late supply of articles. These complaints have on all occasions been attended to, and the contractors either warned or fined.

I beg to annex the reports in original from the responsible officers belonging to the staff of the Campbell Hospital for your information. I observe that the Teacher of Medicine complains that the quality of the diet is not good. When giving the contract in April 1879, I asked all the hospital staff, including this officer, to assist me in selecting the various articles of diet, and this they did; and the diets have since been supplied up to the samples selected by them on that occasion. The Teacher of Materia Medica objects to rum as a stimulant. The rum supplied to the patients is obtained from the Commissariat Department, and is of the very best quality. I have always used it in the Police hospital, and while six years in charge of the Presidency Jail, I used nothing else and with the best possible results.

Dated Calcutta, the 21st January 1880.

From—TAMERZ KHAN, KHAN BAHADOOR, Teacher of Materia Medica, in charge of the 1st Medical Ward, Campbell Hospital,

To—The Superintendent, Campbell Medical School and Hospital, Sealdah.

WITH reference to letter No. 149, dated the 12th instant, from the Surgeon-General of Bengal, to your address, calling for information whether the maximum limit fixed by Government for the cost of diets and extras for the native sick admitted into this hospital has been found sufficient or not, in reply I have the honour to submit the following as my opinion on the subject.

1. Taking into consideration the kind of men resorting to this hospital for medical relief as invariably belonging to the poorest order of the native society, and as such, who when in health and subsisting upon their own resources, their expenses for dieting and so forth are necessarily of the lowest possible amount; consequently, I believe that the maximum limit fixed for their use can by no means be deemed insufficient. The experience of past years proves that the allowance has worked well and sufficiently.

2. In all such cases of serious sickness, where certain special items of food and stimulants were deemed expedient for their recovery, I can pretty safely assert that considerations of economy have not prevented me from ordering and using them; but at the same time I must state that such extras, stimulants, and so forth, have been held permissible only in those cases where they were indispensably requisite for the recovery of such cases.

3. I beg to state that the *quantity* of food served out to the sick in this hospital has been found generally to be sufficient; but with regard to the *quality*, I regret I am not prepared to make a similar unqualified and unreserved admission. To illustrate what I mean, I beg to cite the single instance of our "milk supply."

Milk is the great staple diet of the natives, and the amount ordered and consumed by our patients forms no mean item of our contractor's bill. It is a well-known fact that the value of this article of sustenance is from some time past rising higher and higher. In fact, a short while ago, in the Calcutta markets, *milk of a medium quality* was being sold at about three seers per rupee!!! Consequently, I apprehend much of the quality of milk supplied to our hospitals cannot possibly be of the best and unadulterated kind. Considering also the constantly fluctuating, but ever increasing, condition of the market-value of food-grains, of ghee, meat, fish, and so forth, and each of which are gradually and certainly rising higher and higher in price, I fear I cannot be far from the truth when I presume to assert that the *quality* of articles supplied must necessarily be of a more or less inferior description.

Lastly, I beg to state that, although complaints more of an imaginary kind crop up now and then, but I do not remember when "complaints which could be connected with restrictions as to means" having come to my knowledge.

Dated Calcutta, the 21st January 1880.

From—BABOO JUGGOBUNDO BOSE, M.D., Teacher of Materia Medica, in charge of the 2nd Medical Ward, Campbell Hospital,

To—The Superintendent of the Campbell Medical School and Hospital, Sealdah.

WITH reference to the Surgeon-General's letter No. 149, dated the 12th January, calling for information whether the limit fixed by Government for the cost of diet and extras for the native sick has been found sufficient or not, I respectfully beg to submit the following as my humble opinion on the subject:—

1st.—Considering the class of men who resort to this hospital for treatment, the limit fixed by Government has, in my humble opinion, been found sufficient; and generally speaking, has worked satisfactorily.

2nd.—Considerations of economy never prevented me from ordinary extras; but as a rule, I have only allowed them in urgent cases. I do not consider rum to be a good stimulant for the sick.

3rd.—The diet that is supplied to the native sick of this hospital is sufficient in quantity and pretty good in quality. With the high rate that is now prevailing in the market, I think it will be difficult to procure the best articles of food within the limit of cost that has been sanctioned by Government for dieting the native sick.

Dated Calcutta, the 22nd January 1880.

From—BABOO NRITTO GOPAL MITTRA, Resident Assistant Surgeon, Temporary and Small-pox Wards,

To—The Superintendent, Campbell Medical School and Hospital.

IN reply to the Surgeon-General's letter No. 149 of the 12th instant, I have the honor to state for your information that the maximum amount fixed by the Government as the cost of dieting each patient is on an average sufficient for such cases as are ordinarily treated in the ward, granting that there is no rise in the price of the articles; but in the event of sloughing, dysentery, low forms of diarrhoea, gangrene, erysipelas, and such like cases of

extreme prostration preponderating over other cases in the ward by a large number, I think an allowance something above the fixed amount may then appear needful.

As regards cases of small-pox in its different varieties, I am of opinion that the fixed amount is not adequate, as the patients for several days from the onset of the disease cannot take anything else than fluids for their nourishment; wherefore in their state of utter helplessness they are fed with milk, broth, sago, and rum in quantities sufficient to keep up the strength; and in doing this I have always found that the diet expenditure of this ward has exceeded the maximum amount, as will be seen by a reference to the diet-book of the ward.

Further, I beg leave to state that the quality and quantity of articles supplied have been satisfactory, and that no reasonable complaints have ever been made to me by the patients.

Dated Sealdah, the 21st January 1880.

From—BAROO DOYAL CHUNDER SHOME, Teacher of Midwifery, Campbell Medical School,

To—The Superintendent of the Campbell Hospital, Sealdah.

With reference to the Surgeon-General's No. 149, dated the 12th instant, I have the honour to state—

1st.—That I consider the average allowance of $3\frac{1}{2}$ annas for each patient to be sufficient to cover the expenses of ordinary diets and necessary extras for the class of patients that resort to the Campbell Hospital for treatment, inasmuch as the total cost of diets and extras for my patients during the past year fell short of the limit sanctioned by Government.

2nd.—That considerations of economy never prevented my prescribing anything that I considered essentially necessary for the recovery of my patients.

3rd.—That I have not had any general complaints in regard to quantity or quality of articles of food supplied; the few I had were on very unimportant points, due to individual tastes or whims, which it is not possible in a large institution like this to perfectly satisfy in all cases.

Dated Calcutta, the 21st January 1880.

From—ZUHIRUDDIN, Teacher of Surgery, in charge of the Surgical Wards, Campbell Hospital, Sealdah,

To—The Superintendent, Campbell Hospital.

With reference to your office memorandum No. 17, dated the 15th instant, accompanying a letter No. 149, from the Surgeon-General for Bengal, dated the 12th instant, I have the honour to inform you that—

2. Considering the class of natives who were admitted into this hospital during the year 1879, the maximum limit fixed by Government for the cost of diets and extras for native sick was sufficient to supply them with everything that was necessary and advantageous to them. In my humble opinion, I beg to state that they were more satisfactorily fed in this hospital than what could have been done in their own houses. A native of the lowest class would seldom spend more than 2 annas for his daily food. Allowing $1\frac{1}{2}$ anna more for sick diets, I see that $3\frac{1}{2}$ annas would be quite sufficient for a low class native to defray all his necessities as regards diet whilst sick.

3. There was no instance in which considerations of economy have prevented me from ordering for a patient what has been thought conducive to his recovery.

4. The quality as well as the quantity of articles supplied to the sick during the last year have given me satisfaction, and I have not heard any complaint from the patients of my wards which I could connect with restriction as to means.

Dated Calcutta, the 15th January 1880.

From—The Honorary Secretary, Hospital Nurses' Institution,

To—The Officiating Surgeon-General for Bengal.

In reply to your letter of the 12th instant, asking for the opinion of the Hospital Nurses' Committee, and that of the ladies of the Canning Home, as to the quality and sufficiency of the diet and extra articles supplied during the past year to the sick in hospital, I have the honor to inform you that both the committee and the ladies of the Canning Home believe that the rations supplied to the sick in the General and Medical College Hospitals are good in quality and sufficient in quantity.

In reply to paragraph 2 of your letter, the committee are glad to inform you that no well-grounded complaint from a sick person relating to food has reached them, though it is impossible amongst a large number of sick people that none should ever grumble.

The ladies of the Canning Home have frequently tasted the soups and some other articles of food supplied to the patients in the General Hospital, and report them to be excellent in quality. In the opinion of the ladies of the Canning Home, the patients are as a rule satisfied with the rations at the General Hospital, and the sailors amongst them frequently regret that they are not so well fed on board their ships.

The Lady Superintendent reports that the full rations have greatly improved during the past year, and that she believes them to be almost needlessly large in quantity.

With regard to the Medical College Hospital, which is constantly visited by the ladies of the committee, they believe there is no real ground of complaint about the food, and it is very exceptional that any sort of complaint is made.

When the new system was introduced there was much discontent and disapproval both amongst the patients and nurses at the alterations and retrenchments in the scales of diet; but the matron now admits that the rations are very good and sufficient in quantity. She says also that she considers the food supplied to the native patients is superior in quality to that formerly provided for them, and that they are quite satisfied with their treatment in hospital.

Dated Calcutta, the 21st January 1880.

From—SURGEON-MAJOR H. CAYLEY, Surgeon-Superintendent, Mayo Native Hospital,
To—The Officiating Surgeon-General for Bengal.

In accordance with the request conveyed in your letter No. 153, dated 13th January, regarding the cost of diets in the Mayo Hospital during the past year, I have the honor to furnish the following statement.

The total number of in-door patients, that is, the aggregate of the daily average of sick during the year, amounted to 31,281. Of these, 641 daily diets were supplied entirely by their friends, 2,101 received milk only from the hospital; the rest of the diet being provided by their friends; the remainder, 28,540, diets were supplied by the hospital.

The cost of the above diets was as follows:—

				Rs.	A.	P.
Food and extras	...	...	...	4,753	2	0
Stimulants	...	...	...	276	3	0
Total	..			5,049	5	0

Deducting from this Rs. 200, which is about the value of the milk supplied to the patients who otherwise fed themselves, it leaves Rs. 4,849 as the cost of the 28,540 diets supplied by the hospital. This gives an average of 2 annas 8-6 pies for each daily diet.

I consider that the patients received all that was absolutely necessary for their support, at the same time the utmost economy was from necessity invariably practised.

The rice and other staple articles of food were of the quality usually consumed by the class of people from which the majority of the patients are derived.

Meat was given only to a very small extent, as meat fit for invalids is expensive, and by far the majority of the patients being Hindoos, I find that in most cases pure milk, such as I am able to obtain, supplies the place of animal food, and is much cheaper than meat. I am, however, of opinion that although the diet supplied was all that was absolutely necessary, it might with advantage be somewhat improved in quality, and made more varied to suit the weakened and capricious appetites and cravings of sick people, did the funds of the hospital admit of any increased expenditure. As it is, we work pretty well up to our income, and the cost of the diet can only be increased by reducing the number of patients; but when there are so many applicants for admission, it is almost impossible to keep down the numbers.

The cost of stimulants is very small, as I seldom order any other alcoholic stimulant but rum for native patients, and this I give very sparingly, as the impression I have derived from my experience is that much alcohol is not often required in the treatment of disease.

As I have the sole responsibility and charge of the patients in the Mayo Hospital, and the other medical officers are only my immediate assistants, their opinion on the above points can scarcely at the present time differ from my own.

ANNEXURE IV.

No 351BG, dated Calcutta, the 16th May 1878.

From—J. IRVING, Esq., M.D., Officiating Surgeon-General for Bengal.

To—The Secretary to the Government of Bengal, General Department.

REFERRING to my letter to your address, No. 210BG of the 8th April last, I have the honor to forward copy of a letter from the Secretary to the Committee on Medical Expenditure to my address, No. 53, forwarding a resolution of the committee, dated 6th instant, to the effect that the Shumboonath Pundit Ward of the General Hospital should be closed, and the money returned to the Shumboonath Committee, which I recommended in the letter first quoted.

I trust that His Honor the Lieutenant-Governor will sanction this proposal.

No. 53, dated Calcutta, the 15th May 1878.

From—R. HARVEY, Esq., M.B., Secy. to the Committee on Medical Expenditure,
To—The Surgeon-General for Bengal.

I HAVE the honor to inform you that at a meeting of the committee held at the General Hospital on the 6th instant it was resolved—

“That in the opinion of the committee the Shumboonath Pundit Ward is unnecessary, as the patients can be accommodated elsewhere; that it is expensive out of all proportion to its use; and that it should be closed at once, and the money received from the Shumboonath Committee be returned to them.”

No. 2307, dated Calcutta, the 22nd June 1878.

From—COLMAN MACAULAY, Esq., Under-Secretary to the Government of Bengal,
Judicial, Political, and Appointment Departments,
To—The Commissioner of the Presidency Division.

THE question of the retention of the Sumbhoonath Pundit Ward in the Presidency General Hospital having been raised by the Medical Department, the Lieutenant-Governor desires me to communicate to you the following observations and orders on the subject.

2. From a review of the old correspondence His Honor observes that the removal of the Sumbhoonath Pundit Hospital to Peepulpattee Road had affected its usefulness and popularity; and as the cost of maintaining its in-door branch was out of all proportion to the benefits conferred by it, the committee of the hospital, with a view also to reduce its expenditure without depriving the sick poor of the advantages afforded by the institution, offered to transfer the in-door department to the Presidency General Hospital, on the condition that a separate ward for the treatment of native surgical cases, to be called the “Sumbhoonath Pundit Ward,” be maintained by Government in connection with the hospital; the committee making over to Government 4 per cent. securities of the nominal value of Rs. 6,000 and Rs. 50 monthly, or half the subscription of a Suburban Municipality to the Sumbhoonath Pundit Hospital, and surrendering the Rs. 100 per mensem which the Government then contributed towards that institution; and the Government, on the other hand, continuing to allow the committee an Assistant Surgeon on Rs. 150 a month as heretofore for the out-door dispensary which they were desirous of maintaining at Bhowanipore, and Europe medicines free of cost. These terms were accepted by Government, and the ward was opened in the General Hospital on the 7th August 1873.

3. The Surgeon-General for Bengal, however, has recently brought to notice that during the past year the ward cost Government Rs. 7,011, while the amount received from the Sumbhoonath Pundit grant amounted to Rs. 840. Each patient cost Rs. 280, while the cost of each patient in the Mayo Hospital in 1876 was about Rs. 100. Very few of the patients came from Bhowanipore, the daily average being not more than five. It has also been pointed out that the number of patients has been steadily diminishing since the abolition of the out-patient department in the General Hospital, and that there were only 11 on the 1st April 1878; that a native in-patient department cannot be efficiently kept up without an out-patient department, and that the closure of the one is almost a necessary consequence of the abolition of the other, on account of their inter-dependence. The retention of the ward, moreover, meets no want that cannot be provided for elsewhere, as the Mayo Hospital, the Russapugla Dispensary, and the Campbell and Chandney Hospitals can accommodate more patients than are there at present. It has accordingly been represented that there is no need for the native ward in the General Hospital, that the money expended upon it is wasted, and that the Government securities of the value of Rs. 6,000 should be returned to the Sumbhoonath Pundit Committee.

4. The Lieutenant-Governor referred the question for the opinion of the Committee on Medical Expenditure at present sitting in Calcutta. The committee agree with the Surgeon-General for Bengal in thinking that the retention of the ward is unnecessary, as the patients can be accommodated elsewhere; that it is expensive out of all proportion to its use; that it should be closed at once; and that the money received from the Committee for the management of the Sumbhoonath Pundit Hospital should be returned to them.

5. It appears to the Lieutenant-Governor that even as a general in-door ward the Sumbhoonath Pundit Ward in the General Hospital has been a failure, and that, if it were restricted, as it was originally intended, to surgical cases only, the failure would be still more marked. Under the circumstances explained, His Honor agrees with the Medical Committee, the Surgeon-General, Bengal, and all officers who have examined the question, in thinking that the ward is unduly expensive and quite unnecessary, and that the existing arrangement cannot be maintained. Before, however, directing the closure of the ward, the Lieutenant-Governor desires that you will be good enough to consult the Magistrate of the 24-Pergunnahs and the Committee for the management of the Sumbhoonath Pundit Hospital, and submit for his consideration any proposals you may wish to make on the subject.

No. 38JM, dated Calcutta, the 18th July 1878.

From—F. B. PEACOCK, Esq., Offg. Commissioner of the Presidency Division,
To—The Secretary to the Government of Bengal, Judicial Department.

WITH reference to paragraph 5 of the Government orders No. 2307, dated the 22nd ultimo, I have the honor to submit copy of a letter No. 8A, dated the 16th instant, from the Magistrate of the 24-Pergunnahs, with its enclosure, regarding the proposal to abolish the Sumbhoonath Pundit Ward in the Presidency General Hospital.

2. It seems clear that the retention of the Sumbhoonath Pundit Ward in the General Hospital is a waste of money, and it is equally clear that the funds which will be set free on its being closed will not suffice for opening a ward for surgical cases in connection with the present dispensary. This, however, is in Calcutta not so much a matter of regret as it would be in many other places, as there is sufficient accommodation in other hospitals for more patients than they already have.

No. 3A, dated Alipore, the 16th July 1878.

From—P. NOLAN, Esq., Magistrate of the 24-Pergunnahs,
To—The Commissioner of the Presidency Division.

WITH reference to your memorandum No. 53JM, dated 26th ultimo, I have the honor to forward a copy of the resolution of the Sumbhoonath Pundit Dispensary Committee on the proposal to abolish the native ward in the Presidency General Hospital. My own opinion is the same as that expressed by the committee.

At a Meeting of Sumbhoonath Pundit Dispensary Committee held at the Dispensary on the 15th July 1878 at 7 A.M.

PRESENT:

P. Nolan, Esq., c.s., *Chairman*.
Dr. E. Gayer, Civil Surgeon.
Moulvie Abdool Luteef, Khan Bahadoor.
Baboo Jugodanund Mookerjee.
Baboo Ram Sunker Sen, *Isai Bahadoor*.
Syud Amir Hossein, Khan Bahadoor, *Secretary*.

READ a letter from the Bengal Government, No. 2307, dated 22nd June 1878.

1. The committee is of opinion that, with regard to money at its disposal, it cannot open any in-door dispensary as a substitute for the Sumbhoonath Pundit Ward, as its current income is only sufficient for its present wants, and the Rs. 6,000 in securities, and Rs 50 a month which it would obtain by the abolition of the ward, are not nearly sufficient for the purpose.

2. The committee would regret the closing of the Sumbhoonath Pundit Ward in the Presidency General Hospital, as there is no other hospital within a convenient distance of the southern suburb. But it is not in a position to offer any objection to such a measure, for the amount for the land taken up for the out-door dispensary in Bhowanipore having been much in excess of the estimate, it would not be in a position to meet its liabilities without receiving back the securities referred to.

P. NOLAN,
Chairman.

No. 2806, dated Calcutta, the 12th August 1878.

From—H. M. KISCH, Esq., Offg. Under-Secretary to the Government of Bengal,
Judicial, Political, and Appointment Departments,
To—The Commissioner of the Presidency Division.

I AM directed to acknowledge your letter No. 38JM, dated the 18th ultimo, together with its enclosure, from the Magistrate of the 24-Pergunnahs, forwarding a copy of a Resolution of the Sumbhoonath Pundit Dispensary Committee on the proposal to abolish the Sumbhoonath Pundit Ward in the Presidency General Hospital.

2. In reply, I am to say that the Lieutenant-Governor is satisfied that the retention of the ward is unnecessary, as the patients can be accommodated elsewhere, and that its cost is out of all proportion to its use. His Honor accordingly directs the closure of the Sumbhoonath Pundit Ward in the Presidency General Hospital, and the re-transfer to the Sumbhoonath Pundit Dispensary Committee of the Government promissory notes of the value of Rs. 6,000 now standing in the names of the Superintendent of the Hospital and Accountant-General. The Surgeon-General, Bengal, will be requested to issue the necessary subsidiary orders in connection with the closure of the ward, and to take steps in communication with the Accountant-General for the retransfer of the Government securities.

3. I am to add that the payment by the Committee to Government of the sum of Rs. 60 monthly, being half the subscription of the Suburban Municipality towards the Sumbhoonath Pundit Hospital, should cease from the date of the closure of the ward.

ANNEXURE V.

No. 405, dated Fort William, the 13th June 1877.

From—SURGEON-MAJOR J. F. BRATSON, M.D., Surgeon-General, Indian Medical Department,

To—The Secretary to the Government of Bengal, Political Department.

IN consequence of a serious complaint on the part of the Officiating Surgeon-Superintendent, Presidency General Hospital, attributing severe blame to the principal medical subordinate of that institution because of delay in accomplishing the distribution of medicines to the "out-door" class of native patients, and imputing to Mr. Sleigh's indifference what is called the small attendance of this class, I considered it my duty to make personal enquiry into the matter, and especially into the authority under which this new branch of practice in the General Hospital was sanctioned.

2. To my astonishment the arrangement as now worked was neither contemplated nor sanctioned, or I strangely misconceive the entire drift of the correspondence commencing with Government letter No. 1344 of 4th April 1873, and terminating with No. 2408 of the 5th of July following. The sole addition authorized to be made to the Presidency General Hospital was the "Native Surgical" or "Sumbhoonath Pundit" Ward; and I consider the existing system of treating besides, at the hospital daily, immense numbers of out-patients, not only altogether unnecessary, but absolutely unjust to the district dispensaries whose patients are withdrawn in about equal proportion to those treated in the Presidency General Hospital, and in an especial manner to the Bhowanipore dispensary, the managing committee of which so generously made over the funds necessary to establish and carry on the "Sumbhoonath Pundit" ward, merely stipulating that their "out-door" patient department should be guaranteed to the dispensary by having from Government an Assistant Surgeon on Rs. 150 per mensem, and European medicines free of charge, a condition which has been strictly fulfilled by Government.

3. Had there taken place in the locality from which the Bhowanipore institution draws its patients any sensible increase of population, the extra facilities given at the General Hospital might have exercised little unfavourable influence on the other institution; but as matters really stand, there is simply a rivalry between the two, all the more unequal because of the name which such an institution as the General Hospital possesses, together with the belief, not ill-founded I fear, that in the latter everybody receives only English medicines for the most part. This is strongly dwelt upon in the report of the working of the district dispensaries by the Officiating Civil Surgeon of the 24-Pergunnahs, now under submission to Government.

4. I say the belief appears well founded, because, upon referring to the Examiner of Medical Accounts, I find that, since the establishment of the "out-door" native patient department, the cost of the European medicines has risen annually, and that the expenditure which in 1876 amounted to Rs. 18,768-4 was in 1870 only Rs. 6,426-15, while the augmentation in the aggregate of European and Eurasian patients did not touch 50 per cent.

5. It is to be further remembered that the "out-door" branch establishment at the General Hospital entails an expenditure of Rs. 1,200 annually for the mere pay of the Assistant Surgeon in charge, a sum which would not be grudged if the expenditure were really required, but which under the actual circumstances it is not easy to justify nor even to approve, since a directly collateral effect of it cannot fail to be the comparative idleness of the Assistant Surgeon at the Bhowanipore dispensary, who is in receipt of Rs. 150 per mensem.

6. The "out-door" branch, which was alone contemplated by the Medical Department and by Government in the correspondence above cited, was one in which slight cases of Europeans and Eurasians should be treated, thereby economising space in the wards of the institution. It was to be placed under the charge of the apothecary, and eventually under one of the Resident Surgeons, a proposal which would never have been made had the present enormous native attendance been thought of. So clearly is this the case that the Deputy Surgeon-General of the day dwelt upon the necessity of the relief being afforded at a very early hour of the morning during the hot season, simply because the attendance was to be entirely made up of these two classes. The "Sumbhoonath Pundit" surgical ward should draw its cases from the Bhowanipore dispensary attendance, those needing in-door treatment being daily sent on by an order of admission from the officer of that institution.

No. 971T, dated Darjeeling, the 3rd July 1877.

From—S. C. BAYLEY, Esq., C.S.I., Secy. to the Govt. of Bengal, Political Dept.,
To—The Surgeon-General, Indian Medical Department.

I AM directed to acknowledge the receipt of your letter No. 405, dated the 13th ultimo, reporting the result of the enquiries instituted by you into the authority under which the out-door dispensary in the General Hospital at the Presidency was established for native patients; and with reference thereto, I am to say that the records of this Government bear out the conclusion you have arrived at that the establishment of the dispensary was entirely unauthorized.

2. The Lieutenant-Governor concurs in the views expressed by you that the present system of treating large numbers of native out-patients at the General Hospital is unnecessary, and is likely to have a most injurious effect on the district dispensaries in the neighbourhood. Mr. Eden is, however, of opinion that the out-door dispensary having once

Dr. R. Cockburn, Deputy Surgeon-General, Presidency Circle.

Dr. J. Elliott, Officiating Surgeon-Superintendent, General Hospital.

Dr. J. Browne, Officiating Secretary to the Surgeon-General, Indian Medical Department.

been established, and having attracted a large number of native patients, some caution is requisite before deciding on at once closing it, and he therefore requests that you will appoint the gentlemen named in the margin to be a committee for the purpose of enquiring into, and reporting on, the following points:—

- (1) The sufficiency of the existing dispensaries for native out-door patients, if the out-door dispensary at the General Hospital is closed.
- (2) The necessity of giving out-door relief at the hospital to Europeans and Eurasians, especially the distribution of European medicines to such classes free of cost.
- (3) The extraordinary increase in the cost of European medicines between 1870 and 1877.

3. Mr. Eden has observed that the cost of the Medical Department is increasing to a very serious extent, and he begs that you will watch most carefully the tendency of the large hospitals to increase their expenditure of European medicines and medical comforts, and will do your utmost to check extravagance in this matter.

No. 912, dated Fort William, the 25th September 1877.

From—DR. J. F. BEATSON, M.D., Surgeon-General, Indian Medical Department,

To—The Offg. Secretary to the Government of Bengal, Judicial Department.

Your reminder of 20th instant, drawing my attention to the preceding letter No. 2560 of 16th July last, I have now the honor to acknowledge, remarking that there has been no avoidable delay on my part in complying with the instructions of Government.

2. After receipt of the report* of the committee assembled at the Presidency General Hospital to investigate certain points connected with the out-door native patient branch of that institution, several references affecting the figures, both as regard the attendance and the expenditure in the matter of European medicines, were unavoidable, and only on the 22nd instant had I full information on the above point.

* Hereto annexed.

3. The committee appear favourable rather than otherwise to a continuance of the existing arrangements, chiefly, as far as I follow the reasoning, because the people prefer the "superior advantages" of the General Hospital,—an expression which I utterly fail to comprehend, apart from the fact of English medicines being the rule of the institution, or of a belief on the people's part that such is the case. The less popular institutions have equal advantages in respect of the civil surgeon's supervision, and of quite as capable subordinate medical officers.

4. Whatever may be the value of the committee's table displaying the cost of Europe medicines and attempting to lay the blame of the additional expenditure on some other cause than the issues to the out-door native branch, I note this simple fact that, while in 1870 the European average daily sick was 167.16, with an expenditure for Europe medicines of Rs. 6,426-15-3, the past year, with a daily average European sick of 176.20, was debited with Rs. 18,768-4-1 for the provision of the Europe medicines.

5. My explanation of such an anomaly is that though sanction was not asked for the innovation, the out-door native branch is by no means of such recent institution as has been supposed. No sanction has to this hour ever been given, and yet in three years, from 1874 to 1876, the numbers obtaining relief have increased from 1,516 to 16,293, with a mere sprinkling of the European or Eurasian element, for whom, and for them only, an out-door branch was sanctioned in 1873.

6. On becoming Surgeon-General I found the establishment in full swing, and naturally, I submit, concluded that due official sanction had been obtained. An accident revealed the contrary to me. If it is the pleasure of Government to allow the continuance of existing arrangements, I would very strongly advise that in framing the indents for medical stores for the Presidency General Hospital, that for the European section shall be kept entirely distinct, and that sanctioned for the out-door native branch be in strict accordance with the existing dispensary scales. The "superior advantages" may thus be materially diminished, and the current of attendance be thus again diverted towards the district institutions. Under such circumstances, one of the two assistant surgeons now allowed to the General Hospital, each on Rs. 100 per mensem, would cease to be necessary there; thus effecting the saving of a direct monthly money outlay of one hundred rupees.

Report of a Committee nominated in Government of Bengal letter No. 971 T, dated 3rd July 1877, for the purpose of enquiring into certain points connected with the Out-patient Department of the Presidency General Hospital.

R. COCKBURN, Esq., Deputy Surgeon-General ... President.
SURGEON-MAJOR J. ELLIOT ... }
SURGEON-MAJOR J. G. FRENCH ... } Members.

The committee after careful inquiry have the honor to report as follows on each of the points indicated :—

1. It must be allowed that the existing dispensaries at Bhowanipore and Alipore ought to be sufficient for the requirements of the population of this portion of the suburbs, but no doubt a large number of persons who would not have resorted to these institutions have been attracted to the General Hospital by the superior advantages offered there, and it is probable that, supposing the out-door dispensary of the hospital be closed, the attendance at these institutions would not be increased to that of the General Hospital. The annexed table shows that the attendance at the Alipore dispensary has never been very high, and that only for 1876 has the attendance at Bhowanipore very much fallen off; and this falling off, the committee think, may to some extent be accounted for by the fact that in the early part of 1876 the dispensary was removed from its old location in the Peepulputtee Road (on account of the house being no longer available for the purpose: to a very small house on the road towards Tollygunge. Since its removal to a good new building erected for the purpose on the same road, but in a more central situation, the attendance has been increasing again.

2. The committee are decidedly of opinion that the out-patient arrangements for Europeans and Eurasians should be continued, as also the distribution of European medicines free of cost to such classes.

3. With regard to the increased cost of European medicines since 1870, we beg to observe that in 1872 there was a sudden rise of Rs. 4,590 over 1871, when there was no native out-door department, and the only circumstance we can find to account (we do not say satisfactorily) for this increase is that in 1872 there was a higher daily average of in-door patients than in 1871, viz. 182.25 against 161.25.

In 1873, with a smaller average number of European in-patients, 163.89 only, 15.0 native in-door patients, and a total of only 262 out-door native patients, there was a rise in 1872 of Rs. 3,145.

During 1874, with an average daily sick of 145.94 European and 19.38 native in-patients, and a total of 1,516 out-door patients, the cost of European medicines increased by Rs. 3,850.

During 1875, with a daily average of 161 European and 22.23 native in-door patients, and a total out-door attendance of 9,554, there was an increase of only Rs. 532 in the cost of European medicines over the previous year.

During 1876, with an in-door European average of 176.20, native in-door of 22.05, and a total out-door attendance of 16,293, or 129.31 daily average, the increase in cost of European medicines was only Rs. 432. In this year alone there were 1,203 Europeans and East Indians amongst the out-patients treated, or one in 13½ (the distinction of classes not having been clearly kept, the proportion of these for previous years cannot be given). The committee can only submit the above facts and figures and allow them to speak for themselves, there being no further evidence forthcoming to account for the greatly increased cost of European medicines during the years 1872, 1873, 1874.

CALCUTTA, }
The 22nd August 1877. }

R. COCKBURN, }
Deputy Surgeon-General, } President.
J. ELLIOT, M.D., }
Surgeon-Major, }
J. G. FRENCH, M.D., } Members.
Surgeon-Major, }

Daily Average and Total Out-door Attendance of Alipore and Bhowanipore Dispensaries for the years 1871 to 1876.

YEARS.	ALIPORE.		BHOWANIPORE.	
	Daily average.	Total out-door patients treated.	Daily average	Total out-door patients treated.
1871	40.16	•	41.240	
1872	43.65	6,074	47.74	6,375
1873	50.16	7,003	67.164	7,614
1874	48.60	6,012	98.077	9,809
1875	42.42	5,019	98.014	9,607
1876	129.32	6,435	129.308	6,439

No. 2330T, dated Darjeeling, the 14th October 1877.

From—H. A. COCKERELL, Esq., Offg. Secretary to the Government of Bengal, Political (Medical) Department,

To—The Surgeon-General, Indian Medical Department.

I HAVE laid before the Lieutenant-Governor your letter No. 912, dated the 25th September 1877, with the report of the committee appointed by Government to inquire into certain points connected with the out-door dispensary of the Presidency General Hospital, and into the extraordinary increase in the cost of European medicines between 1870 and 1877.

2. In reply, I am to say that the Lieutenant-Governor directs that the out-door dispensary be closed, so far as native patients are concerned, from the 1st January 1878; and that Dr. Ewart, the Surgeon-Superintendent of the General Hospital, be called upon, on his return to this country, to explain fully the circumstances under which he took upon himself to open the out-door dispensary without the sanction of Government.

3. The out-door dispensary for poor Europeans and Eurasians may be maintained for the present, but only those who really cannot pay should receive their medicines without charge. The Lieutenant-Governor considers that it is most unfair to the private druggists in the town of Calcutta that Europeans and Eurasians who can afford to pay for the medicines they require should receive them at the public expense in the General Hospital dispensary.

4. His Honor also directs the withdrawal from the out-door dispensary, with effect from the 1st January 1878, of the assistant surgeon sanctioned in Government orders No. 3052T, dated the 27th October 1876.

5. I am at the same time to say that the Lieutenant-Governor does not consider the report of the committee full or complete in any way. The increase in the cost of European medicines shows gross want of supervision. It is entirely unexplained, and Mr. Eden therefore requests you to be good enough to place the matter in the hands of the committee

Dr. D. Cockburn, Deputy Surgeon-General, Presidency Circle.

C. T. Metcalfe, Esq., Commissioner of Police, Calcutta.

Dr. A. J. Payne, Superintendent of Asylums at the Presidency.

Dr. Lethbridge, Sanitary Commissioner for Bengal.

composed of the officers named in the margin, appointed to report on the increased expenditure of the Campbell Hospital at Sealdah. Should the officers forming this committee wish it, the Lieutenant-Governor will be prepared to associate with them Mr. Barbour, the Accountant-General, or some other experienced officer of the Account Department, in order that the cause of the increase in the cost of European medicines in the General Hospital may be thoroughly unravelled.

6. The figures given in the table appended to the committee's report show clearly that the increase is to be attributed to causes quite independent of the development of the out-door dispensary. It had begun before the dispensary was opened, and it had almost reached its present limits while the out-door department was yet in its infancy. Between 1871 and 1872, with an increase of 21 in the daily average number of European in-door patients, there was a rise from Rs. 6,717 to Rs. 11,308. In 1873 the native ward was opened and 262 out-door patients, or less than one a day, were treated. The total average daily sick was about the same as in 1870, yet the cost of European medicines was Rs. 14,463 against Rs. 6,426. In 1874, 1,516 out-door patients were treated, and the gross daily average of all in-door and out-door patients was only 181, or one less than that of the European in-door patients in 1872, yet the cost was Rs. 17,804 against Rs. 11,308. But between 1874 and 1876, with an increase of no less than 31 in the daily average of in-door European patients, and of three in that of in-door natives, and of 14,777 in the number of out-door patients, the cost only rose from Rs. 17,804 to Rs. 18,768.

7. The Lieutenant-Governor is unable to accept your explanation of this anomaly—"That the out-door native branch is by no means of such recent institution as has been supposed." It appears most improbable that the other statistics of the hospital should be accurate, and that a small beginning in the attendance of out-door patients should be shown in the return for 1873, the very year in which the proposal to open an out-door department was mooted, and yet that an out-door department should have existed before, unknown to Government and to the Medical Department.

8. But even supposing that out-door patients were treated in 1872, the statistics for 1874, 1875, and 1876 appear to be accurate. Mr. Eden does not understand that you impugn them, nor does there appear to be the smallest reason for calling them into question. The cost of European medicines in these years is actually more than accounted for by the increase in the number of European in-door patients; indeed, it follows the progress of the latter in each year very markedly. In 1875, with an increase of 16 patients, there was an increase in the cost of European medicines of Rs. 536. In 1876, with a further increase of 15 patients, there was an increase of Rs. 432. The fact that an increase of 14,777 out-door patients is practically unaccompanied by any increase in the cost of European medicines, however, remains unexplained. It appears to the Lieutenant-Governor clear that between 1870 and 1874 there must have been extravagance in the management of the hospital, and that this, though not increasing, has settled down into an established practice.

9. The Lieutenant-Governor has already asked what means you or the Deputy Surgeon-General of the Presidency Circle have of watching the growth of expenditure in the Calcutta hospitals, an inquiry to which you have made no reply. Should you have no present means of doing so, the Lieutenant-Governor requests that you will insist upon the submission to you, by the chief medical officers of all the Calcutta hospitals and of the Dacca hospital, of a quarterly return of expenditure, with a corresponding return of population, in each institution, in order that you may have the means of at once observing such increase of expenditure as that which has taken place in the Sealdah and General Hospitals.

10. I am to enquire whether it would not be possible to fix a fair amount for each hospital and dispensary in Calcutta, calculated on the average population, restricting the Superintendent in charge to that amount, and making it incumbent on him to apply to you for any increase in excess of the estimate. The Committee might draw up such a scale on the basis of the facts ascertained in their inquiries. There seems to be no reason why the standard of the General Hospital prior to 1870 should not be reverted to. There is nothing to show that the supply of English medicines there available to the surgeons and medical officers was insufficient, or that the treatment has been more successful and efficient since the excessive increase in expenditure took place. Mr. Eden desires that you will submit a return showing in detail the cost of each of the hospitals and dispensaries in Calcutta from 1867 to 1877.

Rainfall, Weather, and State and Prospects of the Crops

Statement showing Rainfall, Weather, and State and Prospects of the Crops in the different Districts of Bengal, as reported to Government during the week ending the 21st February 1880.

No.	District, and date of return	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL.			
<i>Western Districts.</i>			
BURDWAN DIV.	1 Burdwan. Feb. 21 '80	3.75	Weather—fair and cold. Spring crops generally benefited much by rain but injury to potatoes in Culna, and to sugarcane in Raneegunge reported. Health generally unusually good.
	Culna	1.50	
	Cutwa	2.90	
	Raneegunge	1.75	
	2 Bankoora. " 21 "	2.47	
	Bishenpore	1.90	Weather—rather cool since rain, but bright and clear. Prospects of crops improved by rain. Gathering of mustard, pulses and sugarcane in progress. Ploughing going on generally. Both small-pox and cholera in mitigated form in all thanas of Bishenpore sub-division.
	3 Beerbhoom. " 21 "	2.85	Unusually heavy rain on 15th and 16th somewhat damaged <i>rubbee</i> crops. It will facilitate ploughing. Cholera still prevalent at Rampore Hat.
	4 Midnapore. " 21 "	2.49	Weather—unusually cool. Rain benefited <i>boro</i> , <i>teel</i> and mulberry crops. General health good.
	Contai	2.79	
	Tumlook	1.70	
	Ghatal	1.77	Heavy rain at beginning of week has quite brought back cold weather. Few crops on ground, which are doing well. Sporadic cases of small-pox in many parts of district.
	5 Hooghly. " 21 "	3.26	
	Howrah. " 23 "	2.21	
	Moheerakha	2.60	Weather—cold and dull. Fair <i>amra</i> crop harvested. Public health good.
<i>Central Districts.</i>			
PRESIDENCY DIV.	6 24-Pergunnahs. Feb. 21 '80	2.22	Weather—cloudy and seasonable. Prospects of winter crops satisfactory. Rain generally beneficial and enables agriculturists to plough for <i>amra</i> crop. Public health generally good. Five cases of cholera reported from Diamond Harbour sub-division.
	7 Nuddea. " 21 "	1.79	Weather—cloudy and stormy; very cold for the time of year. Rain done injury to wheat, gram, and peas, but good to other crops. Prospects fair.
	Kooshtea	5.25	
	Meherpore	2.10	
	Chooadanga	3.27	
	Ranaghat	2.2	
	Bongong	3.70	Heavy rain during three days of week. Weather now cooler and sky clear. Rain generally beneficial to crops on ground, and has enabled people to commence ploughing for early rice.
	8 Jessore. " 21 "	1.70	
	Jhenidah	3.22	
	Magoorah	2.99	
	Narail	2.80	
	Khoolna	1.67	Weather—cold. Prospects of crops continue good. Rain general and benefited crops, but somewhat injured mango blossoms. Fever still in some villages of Sudder sub-division. Cholera in a mitigated form prevalent in four villages.
	Bagirhat	1.17	
	9 Moorsshedabad. " 21 "	4.25	
	10 Dinagepore. Feb. 20 '80	1.58	
	11 Rajshahye. " 21 "	2.85	
RAJSHAHY AND COOCH BEHAR DIV.	12 Rungpore. " 20 "	1.36	Weather—cold and wet; now fine again. State and prospects of winter crops continue good. Public health good.
	Gaibanda	2.13	
	Bagdogra	1.45	Weather—very cold. Heavy rain in early part of week. Prospects of crops good. Public health fair.
	13 Bogra. " 21 "	3.55	
	14 Pubna. " 21 "	6.88	Weather—very cold. Heavy rain on 16th, 17th, and 18th. Hailstorm on 16th at 8-30 P.M. Prospects of crops very good. Some damage done to standing crops by hailstones in places round Pubna. Public health good.
	15 Darjeeling. " 21 "	1.28	
	16 Julpigoree. " 21 "	0.85	Weather—cloudy; misty every day; snow fell on evening of 19th. In Terai mustard and <i>kalai</i> being gathered; no other important crop; land being cleared for <i>bhadai</i> crop. In Hills no crop of importance.
RAJSHAHY AND COOCH BEHAR DIV.	Cooch Behar. " 19 "	0.81	Weather—cold and gloomy, with strong winds. Cold-weather crops benefited by rain; <i>bhadai</i> cultivation everywhere well in hand.
	Dinbatta	0.18	
	Mathabhanga	0.24	Weather—cloudy and rainy towards latter end of week, and very cold at night. All prospects good. Rain will be beneficial in every way, especially for cold-weather crops, and for preparation of ground for early rice. Small-pox still very prevalent; cholera heard of in places.

No	District and date of return	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL.—(Continued.)			
Eastern Districts.			
Dacca Div.	17 Dacca, Feb. 21 '80	4.61	Heavy showers from 16th to 18th. Latter part of week clear and cool. Prospects of crops very favorable. Rain done much good to standing crops. Public health good.
	Manickgungo (for week ending 18th Feb.)	6.16	
	Meonshigungo (for week ending 18th Feb.)	3.78	
	18 Furzedpore, " 21 "	6.02	Weather—cool. Heavy rain on 16th, 17th, and 18th. Prospects of cold-weather crops generally good. Rain slightly injured mustard and pulses on ground, but facilitated early cultivation of <i>amun</i> and <i>teel</i> .
	Goalundo	4.90	
	Madaripore	2.15	
Chittagong Div.	19 Backergunge, " 19 "	1.13	Weather—cooler after rain. Prospects satisfactory. Rain will be beneficial to cold-weather crops.
	20 Mymensingh, " 20 "	3.28	Weather—very unusual heavy rain for the time of year; stormy and unsettled. Rain will be most beneficial to spring rice, which requires moisture. Cold-weather crops good.
	21 Tipperah, " 20 "	2.34	Rain on several days. Temperature lower. Rain benefited minor crops still in field and made ploughing easy.
	Brahmunberiah	3.32	
	Chandpore	0.00	
	22 Chittagong, Feb. 24 '80	Few drops	Weather—cloudy on 17th and 18th; since fair. Cold-weather crops progressing well. Cholera not yet abated in Moiscal.
Patna Div.	23 Noakholly, " 19 "	0.22	Rain on 17th. Wind changeable, and sudden alterations of temperature. Ploughing going on busily. Crops look well. Cases of small-pox.
	24 Chittagong Hill Tracts, " 17 "	Nil	Weather—seasonable; hot at noon. Hill people very busily engaged in cutting jums. Mustard collected. Health of people improving.
	Hill Tipperah, " 18 "	2.56	Weather—cloudy. Rain on last three days of week, with easterly winds prevailing. Boro paddy being sown. Sugarcane being cut. Prospects of chillies and mustard fair. Public health good.
BKHAM.			
Patna Div.	25 Patna, Feb. 21 '80	0.84	Weather—clear and cool. Prospects of crops satisfactory.
	Bohar	2.00	
	Barrb	0.9	
	26 Gya, " 21 "	1.73	Weather—very cold. Maximum reading in shade 79°. Prospect of <i>rubbee</i> good. Public health generally good.
	Nowada	1.10	
	Jehanabad	1.48	
Bhagalpore Div.	27 Shahabad, " 21 "	0.95	Weather—cloudy, with west wind. <i>Rubbee</i> greatly benefited by rain, though poppy suffered a little damage. <i>Peas</i> and <i>masoor</i> being harvested. Public health generally good.
	28 Durbhunga, " 21 "	0.57	Weather—cool, with west wind. Rain general and beneficial to <i>rubbee</i> . Slight damage done to cut tobacco and perhaps to mangoes in blossom. A little hail in north of district. Prices stationary. Public health good.
	29 Mozufferpore, " 21 "	0.40	Weather—cold and cloudy. State of crops continues very satisfactory.
	Seotamurhee	0.61	
	30 Sarun, " 21 "	0.88	
	Sewan	0.93	Weather—rain and clouds for two days with east wind; now bright and cold with west wind. General rain during week done slight injury to crops, but on the whole beneficial to <i>rubbee</i> . Prices stationary. General health good.
Bhagalpore Div.	31 Champaran, " 21 "	0.44	Weather—unsettled; rain in early part of week; now fine and cold with west winds. <i>Rubbee</i> crops magnificent; poppy the same.
	32 Monghyr, Feb. 21 '80	2.01	Weather—cloudy and cold. Heavy rain will be injurious, but no harm done as yet.
	Begoesrai	1.37	
	Jamui	2.02	
	33 Bhagalpore, " 21 "	2.05	Unusually heavy rain, followed by westerly winds and severe cold. If it only keeps fine and dry now, rain will have done much good; otherwise there is fear of mildew.
	34 Purneah, " 21 "	1.43	Weather—cold and wet. Some little injury to tobacco, <i>khosari</i> , wheat and mangoes from excessive rain; otherwise prospects good.
	Kissengunge	1.17	
	Arrareah	1.32	
Bhagalpore Div.	35 Maidab, " 21 "	2.27	Very heavy rain for this season on 16th, 17th, and 18th, lowering temperature by ten degrees. Weather now bright and clear. Mustard still being out. Other cold-weather crops in splendid condition. Boro paddy being transplanted. Lands being actively got ready for <i>khadoi</i> paddy and for indigo sowings. Rain done much good. Mango-trees were late in putting forth leaf, and blossomed well with good promise of fruit. They have suffered from late heavy rain. Public health continues good.
	36 Bonthal Pergba, " 21 "	3.32	Rain throughout district, which has brought back cold weather. It will be generally beneficial.
	Deoghur	1.79	
	Godda	2.2	
	Rajmehar	2.08	

No.	District, and date of return.	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
ORISSA.			
ORISSA DIST.	37 Cuttack, Feb 21 '80	0.57	Weather—seasonable. <i>Dalua</i> crop progressing well. Rain very beneficial both for <i>dalua</i> crop and for ploughing paddy fields for next season. Small-pox still prevalent. Common rice 17½ to 21 seers per rupee.
	38 Pooree, „ 19 „	Nil	Weather—seasonable. <i>Dalua</i> progressing well. Cold-weather crops getting on well. Prices of food-grains stationary. Small-pox still lingers. Cholera has appeared.
	39 Balasore, „ 20 „	2.86	Weather—seasonable, with cold nights and hot days. Good rain all over district. Winter crops nearly all stored. Small-pox abated; cholera reported.
CHOTA NAGPORE.			
South-West Frontier Agency.			
40	Hazareebagh, Feb. 20 '80	1.65	Weather—unusually cool after heavy rain; west wind; cloudy with little sun. Heavy rain generally over district eminently favorable for ploughing, though in places may have damaged slightly <i>rubbee</i> and poppy. Prospects of tea also good. Public health continues good.
41	Lohardugga, „ 21 „	1.97	Heavy rain and hail on 17th. Prospects of <i>rubbee</i> crops improved, but rain too late to secure a full harvest. Ploughing going on everywhere for spring sowings.
42	Singbhoom, „ 20 „	2.35	Rain on four days. Weather cool and pleasant. Rain will do good to the little left of gram crop. Health of district good.
43	Manbhoom, „ 21 „	1.75	Weather unusually heavy rain up to 18th; since then fine and cool. Ploughing commenced. Condition of wheat and other standing crops generally good. One or two cases of small-pox.
	Govindpore „	1.27	

Published for general information.

CALCUTTA, STATISTICAL DEPT.,
The 24th February 1880.

A. MACKENZIE,
Secy. to the Govt. of Bengal.

**RETAIL PRICES-CURRENT OF FOOD-GRAINS, FIREWOOD, AND SALT IN THE
UNDERMENTIONED DISTRICTS OF BENGAL FOR THE
FORTNIGHT ENDING 15TH FEBRUARY 1880.**

RETAIL PRICES-CURRENT of Food-grains, Firewood, and Salt in the under-

Number.		DISTRICTS	QUANTITIES PER RUPEE BY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			WHEAT.			BARLEY.			RICE, BEST SORT.			RICE, COMMON.			BLENDED MILLING-- CUMBOO, BAJRA.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
			Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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1	Burdwan

A In the interior the prices range as follow :—Wheat 12 to 12½ seers, barley 16 to 26 seers, best rice 13½ to 14½ seers, common rice 15½ to 16 seers, and gram 13 to 14½ seers.

B In the interior the prices range as follow :—Wheat 9 to 12 seers, barley 17 to 24 seers, best rice 11 to 22 seers, common rice 15 to 22 seers, maize or Indian-corn 12 to 32 seers, and gram 8 to 12 seers.

C In the interior the prices range as follow :—Wheat 11 to 18 seers, best rice 13 to 19½ seers, common rice 14½ to 21 seers, and gram 10 to 14 seers.

D In Tunluc sub-division the prices range as follow :—Wheat 12 seers, barley (at Protapore) 10 seers, best rice 10½ to 14 seers, and common rice 16½ to 16 seers.

E In the interior the prices range as follow :—Wheat 11 to 12½ seers, barley 16 to 18 seers, best rice 8 to 15 seers, common rice 12 to 17 seers, and gram 10 to 13 seers.

F In the interior the prices range as follow :—Wheat 9½ to 10½ seers, barley 13½ to 17 seers, best rice 6½ to 7 seers, common rice 10½ to 17½ seers, maize or Indian-corn in Khidderpore 16 seers, and gram 12½ seers.

G In the interior the prices range as follow :—Wheat 10 to 13 seers, barley 14 to 20 seers, best rice 7½ to 14½ seers, common rice 13 to 18 seers, maize or Indian-corn in Koochta 16 seers, and gram 10 to 11½ seers.

H In the interior the prices range as follow :—Wheat 6 to 8 seers, barley (in Narial) 9 seers, best rice 7 to 16 seers, common rice 15 to 18 seers, and gram 8 to 11 seers.

mentioned Districts of Bengal for the Fortnight ending 15th February 1880.

THE MEER OF 80 TOLAH.

GRAND MILLETS— CHOLU, JOWAR.			LESSER MILLETS— RAGI OR MURWA AND CHENNA.			MAIZE OR INDIAN- CORN.			GRAM.			FERTWOOD.			SALT.			DISTRICTS.	
Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.		
BENGAL.																			Western Districts.
B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.	B. Ch. S. Ch. S.			
...	Burdwan.	
...	Bankoora.	
...	Beerbhoom.	
...	Midnapore.	
...	Hooghly.	
...	Howrah.	
Central Districts.																		Central Districts.	
17 8 16 0 17 8	15 4 16 0 20 0	13 5 13 5 10 10	90 0	90 0	64 0	10 0	10 0	8 0		Calcutta.
...	24-Pergunnahs.	
...	Nuddea.	
...	Jessore.	
...	Mosschedabad.	
...		
...	Dumapore.	
...	Rajshahye.	
...		
...	Rangpore.	
...	Bogra.	
...	Pubna.	
...	Darjeeling.	
...		
...	Julpore.	
Eastern Districts.																		Eastern Districts.	
...		
...	Dacca.	
...	Furzedpore.	
...	Backergunge.	
...	Mymensinga.	

I In the interior the prices range as follow :—Wheat 10 seers, best rice 12 to 18 seers, common rice 15½ to 18 seers, bulrush millet (in Jungipore) 24 seers, and gram 12 to 12½ seers.

J In Roygunge the prices are—Wheat 10 seers, best rice 15 seers, common rice 18 seers, and gram 10 seers.

K In the interior the prices range as follow :—Wheat 11½ to 16 seers, best rice 10 to 16 seers, common rice 18 to 22½ seers, lesser millets (in Kurigram) 20 seers, and gram 8 to 9 seers.

L In Serajgunge the prices are—Wheat 12 seers, best rice 8 seers, common rice 17 seers, and gram 10 seers.

M In Phansedwah the prices are—Best rice 13 seers, common rice 20 seers, and gram 7 seers.

N In the interior the prices range as follow :—Wheat 8 seers, best rice 7 to 13 seers, common rice 14 to 20 seers, and gram 7½ to 8 seers.

O In the interior the prices range as follow :—Wheat (in Naraingunge) 11 seers, barley (in Naraingunge) 12½ seers, best rice 12 to 18½ seers, common rice 18 to 20 seers, and gram (in Naraingunge) 12½ seers.

P In the interior the prices range as follow :—Wheat (in Goalundo) 11 seers, barley (in Goalundo) 14 seers, best rice 12 seers, common rice 17 to 20 seers, and gram (in Goalundo) 9 seers.

Q In the interior the prices range as follow :—Best rice 12 to 17 seers, common rice 14 to 18 seers, and gram 8 seers.

R In the interior the prices range as follow :—Wheat 10 to 13 seers, best rice 8 to 25 seers, common rice 20 to 30 seers, and gram 8½ to 13 seers.

RETAIL PRICES-CURRENT of Food-grains, Firewood, and Salt in the under-

Number.		DISTRICTS.	QUANTITIES PER RUPEE, BY																										
			WHEAT.			BARLEY.			RICE, BEST SORT.			RICE, COMMON.			BULRUSH MILLET— CUMBOO, RAJRA.														
			Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.									
Eastern Districts.—(Contd.)																													
31	Chittagong	S	9 0	0 0	8 0					14 0	14 0	11 0	18 0	18 0	13 5														
32	Noakholly	T								16 0	16 0	9 0	18 0	19 0	12 0														
33	Tipperah		10 8	10 0	9 0					15 0	15 0	8 8	23 0	23 0	13 4														
34	Chittagong Hill Tracts									13 5	13 5	11 6	16 0	16 0	13 5														
	Hill Tipperah		8 0	8 5	7 5					14 0	13 0	10 0	22 0	22 0	15 0														
BEHAR.																													
35	Patna		10 0	17 0	12 0	25 0	25 0	18 0	13 8	12 0	10 0	16 0	18 0	13 0															
36	Gya		14 0	14 5	13 0	28 0	28 0	17 0	8 8	8 8	8 0	17 8	17 0	14 8															
37	Shahabad	U	13 8	13 8	{ 12 4 to 13 0	24 0	24 0	{ 16 0 to 17 0	15 0	16 0	{ 12 8 to 13 0	17 0	18 0	{ 14 0 to 15 0	19 0	19 0													
38	Darbhanga	V	11 0	12 0	12 0	15 0	22 0	18 0	12 0	11 0	11 0	16 0	17 0	14 4															
39	Muzafferpore		11 0	12 0	12 0	25 0	24 0		10 0	10 0	8 0	16 0	16 0	13 0															
40	Saran		13 0	13 0	11 8	21 4	22 4	10 4	8 0	7 8	7 4	16 0	15 8	14 0															
41	Champaran	W	14 0	14 0	11 0				10 0	11 0	8 0	18 0	18 0	11 0															
42	Monghyr	X	13 10	13 2	12 1	16 12	14 11	19 15	12 9	12 9	9 7	16 12	18 6	13 10															
43	Bhagalpore	Y	12 0	11 5	10 11	22 12	20 3	12 10	15 2	13 14	12 0	16 7	15 2	14 8															
44	Purneah	Z	15 0	10 0	{ 11 0 to 13 0	20 0			18 0	13 0	14 8	20 0	{ 19 0 to 20 0	16 0															
45	Maldah		9 0	11 0	12 0				10 0	10 0	12 0	16 8	18 0	15 0	18 0	18 0													
46	Sonthal Pergunnahs	Z1	10 0		8 8				18 0	16 0	14 0	20 0	18 0	15 0															
ORISSA.																													
47	Cuttack		11 13	10 8	13 2				11 13	10 8	11 13	17 1	18 6	15 12															
48	Pooree		10 8	10 8	10 8				10 8	10 8	9 3	18 6	18 6	17 1															
49	Balasore		10 10	11 0	10 0				11 0	13 0	13 0	18 0	18 4	16 0															
CHOTA NAGPORE.																													
South-Western Frontier Agency.																													
40	Hazaribagh	Z2	12 0	12 8	11 8	20 0			10 0	10 0	8 0	23 0	22 8	15 0															
41	Lohardugga	Z3	10 0	11 0	8 0				20 0	20 0	13 0	25 0	24 0	16 0															
42	Singbhoom		7 8	7 8	8 0	16 0	20 0	20 0	12 0	12 0	10 0	28 0	28 0	16 0															
43	Manbhoom	Z4	11 0	11 0	10 0	24 0	24 0	32 0	16 0	12 0	12 0	25 0	25 0	18 8															

* In the interior the price of common rice varies from 15½ to 21 seers per rupee.

S In the interior the prices range as follow:—Best rice 16 to 20 seers, and common rice 18 to 22 seers.

T In the interior the prices range as follow:—Best rice 12 to 20 seers, and common rice 18 to 22 seers.

U In the interior the prices range as follow:—Wheat 14 seers, barley 15 to 25 seers, best rice 11 to 13 seers, common rice 16½ to 22 seers, bulrush millet (in Buxar) 20 seers, great millet 20 to 22 seers, lesser millets 20 to 25 seers, maize or Indian-corn 20 to 22 seers, and gram 14½ to 17 seers.

V In the interior the prices range as follow:—Wheat 12 seers, barley 20 to 25 seers, best rice 9½ to 19 seers, common rice 15 to 20 seers, murwa 19 to 25 seers, maize or Indian-corn 18 to 25 seers, and gram 14 to 17 seers.

W In the interior the prices range as follow:—Wheat 13 to 19 seers, barley 27 to 32 seers, best rice 12½ to 19 seers, common rice 16 to 20 seers, lesser millets 27 to 28 seers, maize or Indian-corn 20 to 28 seers, and gram 15 to 20 seers.

X In the interior the prices range as follow:—Wheat 13 to 14 seers, barley 20 to 22 seers, best rice 9 to 12 seers, common rice 16½ to 18 seers, jowar 18 to 22 seers, murwa 21 to 28 seers, maize or Indian-corn 18 to 26 seers, and gram 15 to 17½ seers.

Y In the interior the prices range as follow:—Wheat 12½ to 17 seers, best rice 10 to 20 seers, common rice 16 to 22 seers, lesser millets (in Soopole) 25 seers, maize or Indian-corn (in Banks) 24 seers, and gram 10 to 13 seers.

mentioned Districts of Bengal for the Fortnight ending 15th February 1880.—(Contd.)

THE SEER OF 80 TOLAHS.

GRAND MILLET— CHOLU, JOWAR.					LESSER MILLETS— RAGI OR MURWA AND CHHENA.					MAIZE OR INDIAN CORN.					GRAM.					FIREWOOD.					SALT.					DISTRICTS.
Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.							
Eastern Districts.—(Contd.)																														
S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	Chittagong.						
...	9 0	9 0	7 8	120	0 120	0 120	0 8 0	8 0	8 0	8 0	8 0	8 0	Chittagong.						
...	9 0	9 0	6 0	...	...	...	9 0	8 0	8 0	8 0	8 0	8 0	Noakholly.						
...	10 8	10 0	8 0	...	...	...	8 12	8 12	8 12	8 12	8 12	8 12	Tipperah.						
...	320	0 320	0 320	0 8 0	8 0	8 0	6 10	6 10	6 10	Chittagong Hill Tracts.						
...	8 0	8 0	7 5	...	...	...	8 0	8 0	8 0	8 0	8 0	8 0	Hill Tipperah.						
BEHAR.																														
...	22 0	23 0	26 0	18 0	17 0	10 8	140	0 140	0 140	0 8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	Patna.						
...	27 0	27 0	...	21 0	22 8	18 8	17 0	17 0	9 8	140	0 140	0 180	0 9 0	8 8	9 0	8 8	9 0	8 8	9 0	8 8	9 0	Gya.						
19 0	19 0	24 0	17 0	17 0	...	...	...	...	...	...	...	17 0	17 0	{ 9 8 to 10 0 }	120	0 120	0 160	0 9 0	8 0	8 0	8 0	8 0	8 0	8 0	Shahabad.
...	19 0	19 0	22 0	20 0	18 0	28 0	13 8	16 0	9 0	140	0 180	0 120	0 8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	Darbhanga.						
...	20 0	20 0	27 0	13 0	17 0	9 0	120	0 120	0 140	0 9 0	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	Muzafferpore.						
18 0	18 0	25 0	18 4	17 12	20 0	19 0	18 8	25 0	15 4	15 4	10 0	160	0 160	0 200	0 8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	Saran.					
...	22 0	23 0	28 0	16 0	18 0	8 8	...	...	...	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	Chumpanan.					
...	17 13	17 13	22 0	14 11	14 11	10 8	147	0 126	0 147	0 8 6	8 6	8 6	8 6	8 6	8 6	8 6	8 6	8 6	8 6	Monghyr.					
...	20 3	21 3	20 8	15 2	15 2	10 11	126	4 126	4 126	4 9 2	8 2	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	Bhagalpore.					
...	13 0	11 0	8 0	120	0 120	0 160	0 8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	Purneah.					
...	20 0	...	11 0	12 0	8 0	120	0 120	0 100	0 8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	Maldah.					
...	25 0	...	21 0	13 0	11 0	8 8	200	0 200	0 200	0 8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	Sonthal Pergab.					
ORISSA.																														
...	10 8	18 6	17 1	...	...	...	15 12	15 12	15 12	160	0 160	0 200	0 11 0	13 0	11 0	11 0	11 0	11 0	11 0	11 0	11 0	11 0	Cuttack.		
...	11 13	11 13	11 13	100	0 100	0 100	0 11 13	11 13	10 8	10 8	10 8	10 8	10 8	10 8	10 8	10 8	Pooree.					
...	8 0	8 0	6 12	140	0 120	0 120	0 9 0	8 8	7 0	7 0	7 0	7 0	7 0	7 0	7 0	7 0	Balasore.					
CHOTA NAGPORE.																														
South-Western Frontier Agency.																														
...	33 0	36 0	23 0	30 0	28 0	20 0	15 0	14 8	9 0	200	0 200	0 240	0 8 0	7 8	7 8	7 8	7 8	7 8	7 8	7 8	7 8	7 8	Hazareenagh.					
...	38 0	42 0	24 0	28 0	28 0	18 0	10 0	10 0	8 0	160	0 160	0 180	0 8 0	8 0	7 0	7 0	7 0	7 0	7 0	7 0	7 0	7 0	Lohardugga.					
...	12 0	12 0	9 0	160	0 180	0 240	0 7 8	8 0	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	Singbhoom.					
32 0	32 0	32 0	34 0	34 0	34 0	32 0	32 0	24 0	11 0	11 0	9 8	120	0 120	0 130	0 8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0	Manbhoon.					

- Z In the interior the prices range as follow :—Wheat 12 to 20 seers, barley 16 to 20 seers, best rice 16 to 20 seers, common rice 16 to 22 seers, and gram 8 to 12½ seers.
- Z1 In the interior the prices range as follow :—Wheat 12 seers, best rice 16 to 20 seers, common rice 19 to 24 seers, maize or Indian-corn 20 to 24 seers, and gram 10 to 18 seers.
- Z2 In the interior the prices range as follow :—Wheat 13 seers, barley 20 to 30 seers, best rice (in Chuttra) 14 seers, common rice 22 seers, lesser millets 32 to 40 seers, maize or Indian-corn 27½ to 30 seers, and gram 12 to 16 seers.
- Z3 In the interior the prices range as follow :—Wheat 12 to 12½ seers, barley (in Daltongunge) 21½ seers, best rice 18½ to 22 seers, common rice 21½ to 30 seers, mohwa (in Daltongunge) 27 seers, murwa 40½ to 45 seers, maize or Indian-corn (in Daltongunge) 37½ seers, and gram 14½ to 16 seers.
- Z4 In the interior the prices range as follow :—Wheat 8 to 10½ seers, barley (in Govindpore) 20 seers, best rice 20 to 24 seers, common rice 22 to 25 seers, bulrush millet 16 to 32 seers, great millet 15 to 30 seers, lesser millets 32 to 34 seers, maize or Indian-corn 34 to 40 seers, and gram 8 to 11 seers.

Published for general information.

A. MACKENZIE,

WHOLESALE PRICES-CURRENT of Food-grains Firewood, and Salt in

Number.	MARKS.	PRICES PER MAUND																	
		WHEAT.			BARLEY.			RICE, BEST SORT.			RICE, COMMON.			BULBUSH MILLET— CUMBOO, HAJRA.					
		Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.
		R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.
1	Calcutta ...	8 8 0	3 7 0	3 12 0	9 2 8	0 2 0	0 2 15	0 6 0	0 6 0	0 6 15	0 3 5	0 3 5	0 3 10	0 ...	...	...	...	...	...
2	Seragunge ...	8 0 0	3 12 0	3 8 0	...	...	...	4 8 0	4 8 0	5 0 0	3 4 0	2 6 0	3 12 0	...	...	...	...	...	...
3	Dacca ...	3 7 0	3 7 0	3 11 0	2 8 0	2 8 0	...	2 6 0	2 6 0	3 8 0	1 15 0	1 15 0	3 2 0	...	...	...	...	...	...
4	Naraingunge	8 8 0	...	...	3 2 0	...	...	2 2 0	2 4 0	3 0 0	2 2 0	2 2 0	3 2 0	...	...	...	...	...	...
5	Chittagong ...	...	...	...	...	...	...	2 14 0	2 14 0	3 8 0	2 4 0	2 4 0	2 11 0	...	...	...	...	...	...
6	Patna	2 8 0	2 6 0	3 6 3	1 0 6	1 9 0	2 3 0	2 15 6	3 1 3	4 0 0	2 8 0	2 3 6	3 1 3	...	...	...	...	...	...
7	Bahar ...	3 12 0	3 2 0	3 12 0	...	...	...	3 9 0	3 2 0	3 0 0	2 3 0	2 3 0	2 6 0	...	...	...	...	...	...
8	Poorce	...	...	...	...	...	...	...	...	...	2 3 0	2 3 0	2 2 0	...	...	...	...	...	...
9	Cuttack ...	3 1 0	3 10 0	3 0 0	...	...	...	3 4 0	3 10 0	3 4 0	2 4 0	2 0 0	2 6 0	...	...	...	...	...	...

CALCUTTA,

The 24th February 1880.

undermentioned Marts of Bengal for the Fortnight ending 15th February 1880.

40 SEERS.

GRANAT MILLET— OHOLUM, JOWAR.			LESSER MILLET— RAGI OR MURWA AND CHHUNA.			MAIZE OR INDIAN. CORN.			GRAM.			PINEWOOD.			SALT.			MARTS.
Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	
R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	
4 02 8 02 4 0	9 10 02 8 02 0 03 0 0	...	...	3 0 03 12 0 0 8 20 630 9 0 4 0 04 0 04 8 6	Calcutta.						
...	3 12 0 3 14 0 5 0 0	4 8 04 6 04 6 0	Serajunge.		
...	3 4 0 8 2 0 1 2 0 0 8 0 0 8 0 0 6 0 4 2 0 4 2 0	Dacca.								
...	3 3 0 3 12 0 4 2 0 0 8 0 0 8 0 0 13 0 4 3 0 4 3 0 4 3 0	Namingunge.								
...	Chittagong.	
...	1 13 0 1 12 0 1 8 0 2 3 0	...	...	2 5 0 3 12 0 0 4 0 0 4 9 0 4 9 5 0 0 4 8 0 5 0 0	Patna.						
...	5 0 0 5 0 0 5 8 0 0 5 6 0 5 4 0 5 4 4 0 0 4 6 0 5 0 0	Balasore.								
...	Pooree.	
...	8 10 0 2 0 0 2 4 0	2 5 0 2 5 0 2 5 0 0	4 0 4 0 0 3 0 3 6 0 3 5 0 3 6 0	Cuttack.					

Published for general information.

A. MACKENZIE,
Secy. to the Govt. of Bengal.

Results of the Meteorological Observations taken at the Alipore Observatory from 15th to 21st February 1880.

Month.	Date.	Maximum in sun.	Mean pressure barometer at 32° F.	TEMPERATURE.				HYGROMETRY.				WIND.		Rain.	Weather.
				Mean.	Maximum.	Range.	Minimum.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.	Prevailing direction.	Miles recorded.		
1880.		☉	Inches	☉	☉	☉	☉	☉	Inches	☉	%.			Inches	
Feb.	15th	148°9	29.886	71.7	82.7	21.4	61.3	67.0	0.003	64.3	78	Till 10 A.M. N by W, till noon E through N E, till 1 P.M. W N W through S, S W and W, till midnight W.	83	Nil	Cloudy, c, p, and d.
"	16th	142.8	847	71.0	81.5	17.2	64.3	67.4	624	65.3	82	Till 3 A.M. W, till 8 A.M. N by E through N W and N, till 11.30 A.M. E N E through N E, till noon N N W through N E and N, till 10 P.M. N E by E through N and N E, till 10-15 P.M. W S W through E and S, till midnight S through S W.	152	0.04	Cloudy, c, p, d, p, f, l.
"	17th	126.2	855	68.9	75.9	12.7	63.2	66.7	639	65.5	89	Till 8 A.M. N by W through S E and E, till 9 A.M. chiefly N N E through N E, till midnight E by S.	151	1.00	Cloudy, c, p, d, and p.
"	18th	139.8	801	71.9	78.5	10.4	68.1	66.6	588	63.6	76	Till 8 A.M. S through S E and S, till 8 A.M. S W by S, till midnight chiefly N W by W through W.	179	1.00†	Day cloudy, night clear, w.
"	19th	134.6	906	63.6	72.9	10.6	56.1	55.0	322	46.9	50	Till noon chiefly N W by W, till midnight W N W.	130	Nil	Clear, f and w.
"	20th	137.6	967	62.5	78.0	20.9	52.1	64.3	310	46.4	60	Till 3-30 P.M. chiefly W N W, till 9 P.M. N W, till midnight N N W.	58	"	Chiefly clear, w.
"	21st	136.7	8048	64.5	76.0	22.6	53.4	59.6	440	55.8	73	Till 10 A.M. N N W, till 3 P.M. N by W, till 9-15 P.M. N W by W, till midnight N E through N.	57	"	Clear, w.

* 0.01 fell at 9-30 P.M. of the 18th. | † 0.78 fell at 6-50 P.M. of the 17th.

The mean pressure of the seven days ... 29.901
 The average pressure of the corresponding period for 24 years, S. G. Office ... 29.941

The mean temperature of the seven days ... 67.7
 The average temperature of the corresponding period for 24 years, S. G. Office ... 73.7
 The extreme variation of temperature during the seven days ... 30.6
 The maximum temperature during the seven days ... 82.7

The mean relative humidity during the seven days ... 78
 The average relative humidity of the corresponding period for 24 years, S. G. Office ... 66

The total fall of rain from 15th to 21st February 1880 ... 2.78
 The average fall of the corresponding period for 24 years, S. G. Office ... 0.27
 The total fall from 1st January to 21st February 1880 ... 2.91
 The average fall of the corresponding period for 24 years, S. G. Office ... 1.29

The mean pressure, temperature, &c., are deduced from observations made at 6 h., 10 h., 16 h., and 22 h., and from the traces of the barograph and thermograph.

The maximum and minimum temperatures are obtained from self-registering thermometers. All the thermometers are verified, and the readings have been corrected to a standard constructed and verified at the Kew Observatory. They are exposed under a thatched shed open at the sides, and are suspended four feet above the ground.

The barometer readings are corrected approximately to those of the Standard Newman's No. 86, formerly at the Surveyor-General's Office.

The hygrometric elements are obtained from Tables III, IV, and V of the official tables computed in the Meteorological Office, and based on Regnault's modifications of August's formula.

The direction and movement of the wind are taken from the trace of a Beckley's anemograph.

The mouth of the rain-gauge is one foot above the ground.

c overcast, g gloomy, d drizzling, p passing showers, t thunder, l lightning, f fog, w dew.

METEOROLOGICAL OFFICE, INDIA,
 The 23rd February 1880.

JOHN ELLIOT,
 For Meteorological Reporter to the Government of India.

PUBLIC WORKS DEPARTMENT, -BENGAL.

GENERAL ESTABLISHMENT.—No. 32.—The 23rd February 1880.

Statement showing heights over mean sea-level and low-water on Rivers Ganges, Bhagirathee, and Brahmapootra during the month of January 1880.

Date.	Miles.	RIVER GANGES.										BRAHMAPOOTRA.			
		Mirzapore.	Benares.	Bazat.	Dinapore.	Monghyr.	Sahibganj.	Rampore Raichah.	Goalundo.	Barhampore.	Kishnagar.	Gowhaty.			
		Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.	Height over mean sea-level.
1st	...	210.80	2.37	175.32	9.35	143.25	2.09	99.77	3.06	71.08	4.00	46.00	3.67	18.41	3.59
2nd	...	210.80	2.33	175.32	9.30	143.25	2.25	99.50	3.17	71.03	3.89	45.02	3.17	18.41	3.54
3rd	...	210.80	2.29	175.32	9.30	143.25	2.27	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
4th	...	210.80	2.25	175.32	9.30	143.25	2.33	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
5th	...	210.80	2.19	175.32	9.30	143.25	2.46	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
6th	...	210.80	2.17	175.32	9.30	143.25	2.46	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
7th	...	210.80	2.10	175.32	9.30	143.25	2.46	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
8th	...	210.80	2.06	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
9th	...	210.80	2.04	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
10th	...	210.80	2.00	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
11th	...	210.80	1.96	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
12th	...	210.80	1.97	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
13th	...	210.80	1.96	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
14th	...	210.80	1.96	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
15th	...	210.80	1.93	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
16th	...	210.80	1.93	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
17th	...	210.80	1.93	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
18th	...	210.80	1.91	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
19th	...	210.80	1.87	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
20th	...	210.80	1.86	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
21st	...	210.80	1.84	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
22nd	...	210.80	1.82	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
23rd	...	210.80	1.79	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
24th	...	210.80	1.76	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
25th	...	210.80	1.71	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
26th	...	210.80	1.67	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
27th	...	210.80	1.63	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
28th	...	210.80	1.59	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
29th	...	210.80	1.54	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
30th	...	210.80	1.50	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54
31st	...	210.80	1.46	175.32	9.30	143.25	2.53	99.50	3.17	71.03	3.87	45.02	3.17	18.41	3.54

T. H. WICKES,
Offg. Asst. Secy. to the Govt. of Bengal, P. W. Department.

Report on the Fluctuations in Traffic on the Northern Bengal State Railway for the month of January 1880.

GENERAL REMARKS.

The gross weight lifted during the month under review stands at 3,32,653 maunds, against 1,26,891 maunds for the corresponding month last year. This weight is made up by a steady increase under all heads of both up and down traffic with two exceptions, ginger and gunnies. The first named may be set down as a mere trade fluctuation, and the latter as the result of the high prices paid by speculators on the spot for the raw material.

Increases.

Alc ... 1,466
In January 1879, 8 maunds only were carried under this head. These heavy despatches in the early part of the year will probably result in a falling off, and consequently a less favorable comparison later on in the season.

Food-grain ... Mds. 46,475
A large proportion of this increase is in local traffic booked to the Saraghat station, and despatched thence by boat to the various marts on the other side of the river.

Jute ... Mds. 55,246
The traffic in this staple, although forming such a favorable comparison with that carried for the same period last year, has fallen off considerably as compared with the previous month. Under this head, in December, 1,31,956 were carried (the greatest weight yet lifted in any one staple in any one month), whereas the gross weight hauled for the month under review stands at 89,284 maunds, a falling off of 51,672 maunds.

This result is solely due to the stocks in the district having become exhausted.

Piece-goods ... Mds. 5,795
The total weight lifted during the month in this staple stands at 6,316, against 521 maunds only for the same month of 1879.

Railway material ... Mds. 41,000
This weight is made up of building material for the locomotive workshops, locomotive coal, and tramway material.

Salt ... Mds. 26,546
As predicted in my October report, the traffic under this head has steadily increased, with the closing of water communication with some of the principal stations. Putting aside the result of the comparison for the corresponding month last year, we have a jump from 15,974 in December 1879 to 27,028 during January 1880.

Sugar ... Mds. 1,514
This is all up traffic. This article does not now appear to be exported from this district, and, from what I can learn, "jute" has in a great measure displaced the sugarcane as a crop.

Tea ... Mds. 2,585
The total weight carried for the month stands at 4,009 maunds, which, as shown, is 2,585 maunds over and above that lifted in January 1879; but last month 13,967 maunds were hauled—a proof that we are at the end of the season.

Tobacco ... Mds. 11,236
As compared with January 1879, the results are good, but the despatches are actually the far-ends of last year's crops collected from the villages some distance from the line. In September last 22,880 maunds were carried, since when there has been a gradual decline.

All other goods ... Mds. 21,300
From August last there has been a steady increase in the weight carried under this head, as the following figures will show:—

	Mds.
August	21,595
September	24,445
October	26,174
November	29,614
December	38,790
January	45,200

Decreases.

Ginger ... Mds. 319
An utter absence of demand for this article in the Calcutta market is the cause of this decrease.

Gunnies ... Mds. 6,718
While the present high rates are paid for the raw material on the spot, no improvement in the traffic in this staple can be looked for.

Statement showing Increases and Decreases in maundage of Staples carried over the line during the month of January 1880.

STAPLES.	1879.		1880.		Total for 1879.	Total for 1880.	Increase in 1880.	Decrease in 1880.
	Up.	Down.	Up.	Down.				
Alc	4	4	1,463	11	8	1,474	1,466	
Food-grain	2,223	19,447	5,638	62,507	21,670	63,145	46,475	
Ginger		921		702	921	702		219
Gunny bags	425	9,712	1,492	19,137	19,137	3,419		6,718
Jute		23,038		83,284	23,038	83,284	55,246	
Piece-goods	350	171	6,214	102	621	6,316	5,795	
Railway material	32,108	5,050	63,214	14,064	37,198	78,198	41,000	
Salt	342	140	26,081	47	442	27,028	26,546	
Sugar	108	8	1,732		176	1,732	1,514	
Tea		1,424	57	3,953	1,424	4,009	2,585	
Tobacco	64	1,701	91	12,076	1,525	13,001	11,236	
All other goods	19,292	4,080	33,728	11,572	23,091	45,300	21,300	
Total	55,034	71,855	1,40,600	1,91,068	1,20,891	3,32,653	2,00,207	

Saidpur, the 12th February 1880.

G. M. DAURY, Traffic Superintendent.

Calcutta and South-Eastern State Railway.

Statement showing Increases and Decreases in maundage of Staples carried over the line during the month of January 1880, as compared with the corresponding period of January 1879.

STAPLES.	1879.		1880.		1879.	1880.	Increase.	Decrease.
	Up.	Down.	Up.	Down.	Total.	Total.		
	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
Firewood	44,520	.....	47,802	.....	44,520	47,802	3,282	.....
Hay	8,500	.....	10,000	.....	8,500	10,000	1,500	.....
Wooloo	1,620	.....	1,140	.....	1,620	1,140	.....	480
Straw	3,480	.....	1,000	.....	3,480	1,000	.....	2,480
Paddy	6,561	.....	5,001	.....	6,561	5,001	.....	1,560
Rice	2,435	.....	3,011	.....	2,435	3,011	576	.....
Building materials	.....	1,080	.....	700	.....	700	.....	900
Sundries	3944	854	502	704	1,2784	1,404	1264	.....
Total	67,5204	2,534	68,210	1,574	70,054	70,533	6,4334	3,660

The increase in firewood is due to greater imports at Basrah and Chapahati.

The increase in hay is due to the demand for the commodity having been increased in the market by supply to the frontiers.

The decrease in wooloo, straw, and paddy is due to the demand for these commodities becoming low.

The increase in rice is due to development of rice traffic at Canning, Basrah, and Chapahati. This rice is entirely local, and is not connected with the rice mills at Canning, which have not as yet commenced to work.

The decrease in building materials is due to less materials having been required by Port Canning Company this year for repair work.

The increase in sundries is trifling.

Calcutta, the 21st February 1880.

R. G. MOOKERJEE, Manager.

Nalhati State Railway.

Statement showing Increases and Decreases in maundage of Staples carried over the line during the month of January 1880, as compared with the corresponding period of January 1879.

STAPLES.	1879.		1880.		1879.	1880.	Increase.	Decrease.
	Up.	Down.	Up.	Down.	Total.	Total.		
	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
Brass and bell-metal ware	502	.....	837	.....	502	837	335	.....
Coal	5,218	.....	17,220	.....	5,218	17,220	12,002	.....
Cotton	90	.....	44	.....	90	44	.....	46
Edible grains	1,584	2,374	1,112	2,010	2,696	4,004	1,308	.....
Gunny	.....	.....	180	.....	.....	180	.....	463
Jaggree and sugar	1,440	.....	1,534	.....	1,440	1,534	94	.....
Piece-goods	1,000	.....	777	.....	1,000	777	.....	223
Potatoes	1,087	.....	1,715	.....	1,087	1,715	628	.....
Silk and silk-cloth	.....	1,112	.....	720	.....	720	.....	392
Seeds of all sorts	.....	.....	2,505	.....	.....	2,505	2,505	.....
Sundries	2,000	240	1,540	1,508	2,000	2,048	48	.....
Shoes	14	.....	153	.....	14	153	139	.....
Wine and beer	65	.....	111	.....	65	111	46	.....
Total	12,861	3,096	28,025	4,582	16,517	33,207	18,545	1,635

The increase in brass and bell-metal ware is due to greater import.

The increase in coal is due to greater import for purposes of brick-burning.

The increase in cotton is due to greater import owing to greater demand.

The increase in edible grains is due to both greater import and export according to the nature of the goods.

The decrease in gunny is due to less import.

The increase in jaggree and sugar is trifling.

The decrease in piece-goods is due to less import for want of demands.

The increase in potatoes is due to greater import.

The decrease in silk and silk-cloth is due to less export.

The increase in seeds of all sorts is due to larger import owing to greater demands.

The increase in sundries is due to greater import.

The increase in shoes is trifling.

The increase in wine and beer is trifling.

Calcutta, the 21st February 1880.

R. G. MOOKERJEE, Manager.

Weekly Return of Traffic Receipts on Indian Railways.

EAST INDIAN RAILWAY.

Approximate Return of Traffic for week ended 14th February 1880 on 1,507½ miles open.

	COACHING TRAFFIC.						MERCHANDISE AND MINERAL TRAFFIC.						TOTAL TRAFFIC RECEIPTS.	TRAIN MILES RUN.		
	No. of passengers.	Coaching receipts.				Weight carried.	Receipts.				Coaching.	Merchandise.		Total.		
		Rs.	A. P.	£	s. d.	Mds. c.	Rs.	A. P.	£	s. d.	Rs.	A. P.				
Total traffic for the week.....	151,546	2,83,707	15 6	26,198	3 0	15,20,015	20	6,29,036	14 0	57,663	10 11	9,14,854	13 6	83,779	108,808	160,808
Or per mile of railway .....	.....	189	9 10	17	7 7	.....	.....	417	5 8	38	5 3	606	15 6	.....	.....	.....
For previous 5 weeks of half-year	518,703	14,16,187	10 3	129,817	4 0	84,12,487	10	54,94,007	13 0	320,328	10 4	49,10,065	7 2	399,912	576,427	863,030
Total for 6 weeks	1,000,651	17,01,985	9 9	150,015	7 0	99,28,502	30	41,23,554	11 0	377,992	10 3	58,25,540	4 9	359,800	683,733	1,022,022
COMPARISON.																
Total for corresponding week of previous year	154,385	2,98,646	2 6	20,938	4 7	17,59,404	0	6,40,090	12 0	59,490	10 9	8,77,736	15 0	51,794	131,929	163,728
Per mile of railway, corresponding week of previous year .....	.....	151	11 2	13	18 2	.....	.....	430	10 4	39	9 0	582	5 6	.....	.....	.....
Total to corresponding date of previous year	1,039,004	15,34,983	7 9	140,706	14 0	1,00,70,993	30	41,99,979	10 1	384,998	2 7	57,34,003	1 10	344,090	520,548	1,106,111

BENGAL PROVINCIAL RAILWAYS.

Weekly Statement of Traffic Receipts.

Date of return received.	Name of Railway.	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1st JANUARY		Total increase in 1880.	Total decrease in 1880.
			18th January 1879.	17th January 1880.	To 18th January 1879.	To 17th January 1880.		
		Miles.	Rs.	A. P.	Rs.	A. P.	Rs.	A. P.
17th January	Northern Bengal	230	19,346	0 0	31,613	0 0	51,135	0 0
31st ditto	Tripura	82	1,047	0 0	8,474	0 0	22,150	0 0
7th February	Calcutta and South-Eastern	28	2,437	0 0	2,313	0 0	6,353	0 0
10th January	Nalhati	27½	1,777	0 0	(a) 1,582	0 0	(a) 15,015	0 0
31st ditto	Patna and Gaya	57	...	...	2,878	0 0	5,215	0 0
	Total	424½	22,647	0 0	53,860	0 0	76,973	0 0
							1,23,080	0 0
							30,081	0 0
							2,876	

(a) Approximate.



SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, MARCH 3, 1880.

OFFICIAL PAPERS.

Non-Subscribers to the GAZETTE may receive the SUPPLEMENT separately on payment of Six Rupees per annum if delivered in Calcutta, or Twelve Rupees if sent by Post.

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Proceedings of the Council of the Lieutenant-Governor of Bengal for the purpose of making Laws and Regulations.

Wednesday, the 25th February 1880.

Present:

HIS HONOR THE LIEUTENANT-GOVERNOR OF BENGAL, *presiding*,
 The Hon'ble C. T. BUCKLAND,
 The Hon'ble H. L. DAMPIER,
 The Hon'ble A. MACKENZIE,
 The Hon'ble J. O'KINEALY,
 The Hon'ble SYUD AMEER HOSSEIN,
 The Hon'ble A. B. INGLIS,
 The Hon'ble KRISTODAS PAL, RAI BAHADOOR, C.I.E.,
 The Hon'ble J. B. KNIGHT, C.I.E.,
 The Hon'ble G. D. FIELD, LL.D.,
 The Hon'ble PEARY MOHUN MOOKERJEE,
 and
 The Hon'ble MAHARAJAH LUCHMESSUR SING BAHADOOR OF DURBHUNGA.

NEW MEMBER.

The Hon'ble MAHARAJAH LUCHMESSUR SING, BAHADOOR, took his seat in Council.

LICENSE TAX AMENDMENT ACT.

The HON'BLE MR. MACKENZIE moved for leave to introduce a Bill to amend the law for licensing trades, dealings, and industries. He said: "A full explanation of the political and financial objects and reasons underlying the measure which I now beg leave to introduce has already been made in the Legislative Council of His Excellency the Viceroy. In the matter of this license tax, any legislation in this local Council can be merely the complement of that devised and introduced in the Supreme Council. We have had specific instructions given to us, and we shall follow them, I am sure, with unmingled satisfaction. First, then, we have to amend the schedules of the Bengal Act so as to exempt from taxation all incomes below Rs. 500 per annum. It may interest hon'ble members to know that the number of persons who actually paid tax in Bengal under each class of the existing schedules stood thus in 1878-79: 401 persons with incomes over Rs. 25,000 per annum paid a fee of Rs. 500; 741 persons making over Rs. 10,000 paid a fee of Rs. 200; 1,656 persons making over Rs. 5,000 paid Rs. 100 each; 4,361 persons making over Rs. 2,500 a year paid Rs. 50 each; 18,120 persons making over Rs. 1,000 a year paid Rs. 20 each; 124,168 persons making over Rs. 250 paid Rs. 5 each; 381,583 persons making over Rs. 100 a year paid Rs. 2; and 184,857 persons on the same income paid one rupee each; thus altogether 715,887 persons were taxed in Bengal. If we assume that of the incomes from Rs. 250 to 1,000, two-thirds are below Rs. 500, as is probably the case, the numbers liable to tax under the amended Act will stand at 66,668 as against 715,887. The relief given will be seen to be enormous. The sacrifice of revenue will be about 11½ lakhs, or more than half the actual collections of the tax in all Bengal. A further concession to be made to the tax-payers is the abandonment of the plan of insisting on separate licenses in each district. One license will now be held to suffice for the province, and if a man carries on business in more provinces than one, or businesses of different kinds, one license will cover all his businesses wherever situated and of whatever description.

"While making these concessions to the public, the Government finds itself compelled to ask for an extension of the period of limitation placed by the existing Act on the recovery of demands. It is found that unless Collectors are to press proceedings with indiscriminating severity, a little longer time must be given for the institution of proceedings against recusants. We must ask the Council to extend the three months now granted after the close of the year to six.

"These are the points common to the proposed Bill now in my hands, and to the legislation for other provinces now pending in the Supreme Council. There are, however, other amendments of the Bengal law which it is proposed to make. The plan of assessing and collecting the tax through municipal agency has not, on the whole, been very successful. Neither in Calcutta nor in the interior have the Municipal Commissioners taken kindly to the duties which it was sought to impose upon them. Apart from that fact, however, it will be evident that, when the number of assessed incomes is to be so largely reduced, the motive for working through municipal agency has practically ceased to exist. The Collector of the district ought to be able to deal directly with all those who will pay taxes under the new law. In Calcutta the Lieutenant-Governor will decide to what officer the duty of assessing and collecting the tax will be entrusted.

"Again, the exemption of small incomes, and the abandonment of the special procedure in force in Calcutta, make it unnecessary to retain the special Calcutta schedule. It is proposed to have one schedule applicable to all Bengal.

"It is also proposed to give the Commissioners a specific power of revising the Collector's proceedings.

"These are the main objects of the Bill which I now ask leave to introduce."

The motion was agreed to.

The HON'BLE MR. MACKENZIE said that it would be seen that the amendments were all in the way of the remission of taxation and the relief of the tax-payers. Much time had been lost since the proposal to amend the License Acts first came under consideration, and nearly the whole of the cold weather

had slipped by. The new Act would take effect practically from the 1st of April next. It was highly important, as hon'ble members knew, that the Collectors should be set about the preparation of the assessment lists, and revise those drawn up under the existing Act without delay. In Calcutta it would be necessary to make arrangements for the entire revision of the lists. He had therefore to ask for a suspension of the Rules for the conduct of business, in order that the Bill might be pushed on as far as possible at the present sitting.

HIS HONOR THE PRESIDENT declared the Rules suspended.

The HON'BLE MR. MACKENZIE then moved that the Bill be read in Council.

The HON'BLE KRISTODAS PAL said :—It would appear from the remarks of the hon'ble mover of the Bill that the exposition made in the other Council yesterday of the financial position of the State was really the statement of objects and reasons for the Bill now before this Council. Although he was conscious that this Council was not competent to control the financial policy of the Government of India, still he respectfully submitted that it was the duty of every hon'ble member of the Council to consider for himself the reasons which might be adduced for the imposition or continuance of a tax sanctioned by it. In that view he would ask permission to make a few remarks upon the arguments which had been advanced in favor of the continuance of the License Tax. Nothing could be more gratifying than the financial position described yesterday. The prospects of the finances were, indeed, cheering; they were told that the surplus would have amounted to nearly 4½ millions but for the war in Afghanistan and other abnormal expenses. It was therefore worthy of consideration whether, in the face of such a substantial surplus, it was reasonable or expedient that this Council should continue in Bengal the License Tax Act imposed in 1878.

HIS HONOR THE PRESIDENT observed that he thought the hon'ble member was going rather beyond the question before the Council. The question was whether this Council should alter and amend a law which had been passed by it on a previous occasion, so as to exempt certain classes which had suffered much from the operation of that law, and not to go into the question of the whole policy of the Government of India. The question of a license tax or no license tax was not really before the Council. The question was whether they should amend the law so as to meet the views of the public. It seemed to His Honor that if the Council went into the question of the whole financial policy of the Government of India, they would put themselves into a very false position; that matter at present was before the Viceroy's Council, and was being considered, and he did not think it was proper or in order for this Council to discuss it in a proposal to amend the License Tax Act.

The HON'BLE KRISTODAS PAL said that if that was His Honor the President's ruling, he must bow to it, but he was under the impression that when a Tax Bill was placed before the Council, it was open to the members to consider the reasons for it.

HIS HONOR THE PRESIDENT thought the Council was bound to adhere to the motion before it.

The HON'BLE MR. DAMPIER believed that, by the Indian Councils' Act, this Council was precluded from touching financial questions, except so far as it was permitted by the Government of India to do so.

The HON'BLE KRISTODAS PAL continued: He would not then touch upon the financial policy of the Government of India, but he hoped he would be permitted to make a few remarks on the shape the Bill had now taken. From what had occurred in the other Council, it would appear that it had been proposed to extend the scope of taxation to other classes than those which were engaged in trades, dealings, and industries. At the sitting of the Viceregal Council held on the 14th November last, and again at the sitting of the 24th December last, it was announced that, while the Government would raise the minimum of taxation to the limit of Rs. 500, it would recoup the loss of revenue by including within the purview of the tax the salaried and professional classes. The arguments in favor of including those classes were very forcibly put by the hon'ble mover of the Bill, but at yesterday's sitting of the Council it was announced that the financial position of the year was such that the Government was not disposed to extend further the scope of taxation. He respectfully

submitted that if the tax was to be retained as an equitable adjustment of taxation, he did not understand why the salaried and professional classes were to be excluded.

HIS HONOR THE PRESIDENT said he must again point out that that was not the question before the Council. The Council was not entitled to discuss the financial policy of the Supreme Government. The Council was barred by its constitution from discussing such questions until it received permission to consider them. His Honor had not applied for that permission, nor did he intend to apply for it. The scheme for licensing salaried and professional classes had been avowedly abandoned by the Government of India for reasons which had been given elsewhere, and therefore to discuss it would be mere waste of time.

THE HON'BLE KRISTODAS PAL resumed:—With regard to the Bill itself, he fully agreed with the hon'ble mover that the exemption of persons with incomes under Rs. 500 per annum would give substantial relief to a large body of tax-payers. But there was one part of the Bill to which he did not agree; he meant the extension of one schedule to Calcutta and the Mofussil alike. In Calcutta there was a heavy municipal license tax levied, and when the Imperial License Tax was imposed the Calcutta schedule was adopted for the purposes of that tax. He did not see any reason why that principle should be departed from in this amending Bill, the circumstances remaining the same. Those who were called upon to pay the Calcutta License Tax would also be subject to pay the Imperial License Tax if their earnings were above Rs. 500 a year. He thought that, as municipal taxation was very heavy in Calcutta, it would be but bare justice to the tax-payers of this city to continue the schedule as it stood in the original Act.

THE HON'BLE MR. MACKENZIE said that, with regard to the objection raised by the hon'ble member opposite as to having one common schedule for Bengal, he might say that the only reason for the adoption of a special schedule for Calcutta in the existing Act was that it was proposed to work the Act through the agency of the Calcutta Municipality. It was thought that it would simplify matters much if, instead of their making a fresh assessment list, the Chairman and Commissioners worked on the same lines as those given in the schedule of occupations in the Municipal Act, according to which the Calcutta License Tax was levied. That schedule, however, covered not only trades, but a certain number of professional persons, such as professional accountants, auditors, and others who, under the policy now laid down, were not to be taxed. Even at the time the Act was passed there was a doubt entertained by the Government of India whether it was proper to include such persons, and the schedule was only accepted on the ground that it was extremely convenient to work the Imperial tax in Calcutta on the same lines as the local tax. Now no such reasons remained for continuing the Calcutta schedule. It was quite true that municipal taxation in Calcutta was heavier than in other municipalities. But that was no reason why a general tax like the present one should not be the same in Calcutta as in the interior of Bengal. The Government of India would certainly object, and rightly object, to give practical application to any proposals recognizing the incidence of municipal taxation as a valid ground of objection to the incidence of a general Imperial tax.

THE HON'BLE MR. INGLIS said that he concurred in most of the remarks made by his friend to the left (Baboo Kristodas Pal). Although they had been told that the Council was incompetent to discuss the reasons for the introduction of this Bill, it would be a relief to himself and his hon'ble friend, who felt very strongly that the necessity for continuing the tax did not exist, if some mode was afforded to them of expressing their views either by putting a direct negative to the Bill, or by making a motion that the license tax of 1878 should be repealed. He thought that hon'ble members who held those views should have an opportunity of showing that they did not approve of the continuation of the tax, having regard to the prosperous state of the public finances. He had no wish to take up the time of the Council in discussing the matter, but he desired to have some tangible mode of showing his disapproval of the tax in any form under existing circumstances.

THE HON'BLE MR. KNIGHT said that, in support of what hon'ble members had already said, he would remark that the principle on which the tax was to be imposed was completely changed by the schedule proposed in the present

Bill. It did not follow the lines laid down in the former Act, which were, comparatively speaking, pleasant lines, but an entirely new principle of assessment had been introduced. On that ground he joined with the hon'ble member opposite in objecting to the schedule which it was proposed to substitute for the Calcutta schedule in this taxation. There was no doubt, as it appeared to him, that the reason why the municipal schedule was retained in the former Act was not simply for the convenience of collections through the Municipality, but because it was felt that the rate of municipal taxation already paid in Calcutta was excessively high, and some consideration was due to the classes who were affected by this Bill. He heartily rejoiced in the great relief from taxation the lower classes would now enjoy; at the same time, it was largely at the expense of other classes whose payments might be largely increased under the new schedule.

HIS HONOR THE PRESIDENT said he did not wish to be misunderstood in respect to the course which was open to hon'ble members in discussing this Bill. It was of course open to any hon'ble member who wished to oppose this Bill to vote against it. The result of the vote, however, would be simply that the present Act would remain as it stood, and all the poorer classes, regarding the heavy taxation upon whom the Council had heard so much, would remain subject to the tax as at present. He could hardly suppose that when the Government of India was willing to meet an outcry from the public, and to exempt the poorer classes, any hon'ble member could possibly wish to stop this Bill, and continue the existing license tax on those classes. The question was not between a license tax and no license tax: that this Council could not discuss, for the Government of India had determined that there should be a license tax; but the result of refusing to pass this Bill would be that the Government of India would certainly, without a day's delay, impose it themselves. It was originally intended that the Government of India should pass the Act, but it was upon His Honor's representation that a measure of this sort should be dealt with by the local Council, and not by the Imperial Government, that Sir John Strachey very properly, and with very good feeling, agreed that the Bill should be dealt with by this Council. The Council knew that the license tax was to be imposed throughout India, and they could hardly expect that because they made some difficulty in passing this little amending and relieving Bill, the province of Bengal would be exempted from the license tax, while the rest of India was subject to it. They would simply drive the Government of India to set aside that Council and pass an Act of its own. That would be the only result of the course which some hon'ble members seemed disposed to adopt. His Honor was entirely unable to concur in the proposal which had been made to take cognizance of Municipal taxation as a set-off to the license tax. Municipal taxation was altogether distinct from, and independent of, imperial taxation; persons liable to municipal taxation would remain liable to it whether this Bill was passed or not, and would remain in exactly the same position as they now stood. Municipal taxation was for municipal purposes. It was a liability incidental to residence in large cities, and must be set off against the advantages of city life; it was a specific payment made for services rendered in the shape of drainage, roads, water, and lighting. Because people in Calcutta demanded proper lighting, water, and drainage, were they to be placed on a different footing from the rest of the people of Bengal, and were the people of Bengal to pay for lighting and drainage and water on account of the people of Calcutta? For that was what the hon'ble member's proposal would practically amount to. It seemed to His Honor that the whole position was absolutely untenable. So far as he was concerned he was entirely opposed to any alteration in the schedule. As he had said before as regarded the measure before the Council, if any hon'ble member wished to oppose the Bill, it was open to him to do so, but the result would be that hundreds of thousands would remain liable to be taxed whom the Government desired to relieve.

THE HON'BLE MR. BUCKLAND said he was not disposed to trouble the Council with many words, but he wished to express his entire concurrence with the very clear and forcible remarks made by His Honor the President. The first point was as regards the policy of the financial measures of Government,

and the second concerned the very great concessions which would be made to the public in the Bill now before the Council. It had been his fortune to help to administer the Act now in force, and he found that there were so many alterations in the Bill entirely in favour of the tax-payers that he was surprised that any hon'ble member should offer to oppose it. He would say one word with regard to the Calcutta Municipal schedule. Practically, that schedule was found to be extremely inconvenient: it was like putting a coat made for one man upon the shoulders of another; the result was that the first estimates of taxation in Calcutta were brought up to about 12 lakhs of rupees; then they had to take the coat to pieces and alter it, and the result was that the assessments had to be reduced to 3½ lakhs. There were certain peculiarities in the Calcutta schedule which made it excessively inconvenient to work, and he would therefore give his full support to the Bill in its present form.

The HON'BLE MR. INGLIS wished to say in explanation that he entirely agreed with those hon'ble members who said that, if the license tax was to be continued, the Council could not have it in a less objectionable form than that which was now proposed, and he fully admitted that very great concessions had been made. He was heartily glad to see the relief afforded to the classes whose incomes were below Rs. 500 a year, and who paid the tax before, and he should be sorry if anything which fell from him would lead the Council to suppose that he was in any way opposed to that concession. His simple reason for rising before was to say that if there was any form by which he could make it clear for his own relief that there was no necessity for continuing the License Tax in any shape at present, he should wish to take advantage of such form. But, as it appeared that it was incompetent for the Council to take up that position, he could only submit to the decision of the President, and say that he would do all he could to assist the Council in passing the amended Bill.

HIS HONOR THE PRESIDENT remarked that he did not wish to say that it was not competent for hon'ble members to object to the introduction of the Bill, but he would point out that the result of shutting out this measure would be that the Government would have to go on collecting the tax under the existing law.

The HON'BLE KRISTODAS PAL observed that he had not the remotest intention to oppose the Bill in its present form. He highly appreciated the benefit which the Bill would confer on a large body of poor tax-payers, and if anything he had said should result in the withdrawal of the Bill he should certainly regret it. But his object was to point out that, looking at the statement of the finances made yesterday, there was, in his humble opinion, no necessity for the continuance of the tax. If the forms of the Council did not permit him to express an opinion to that effect, he must bow to the decision of the President. He did not wish that the Bengal License Tax Act should continue in its present form, for it had been a fruitful source of hardship and oppression, and the present Bill would greatly mitigate those evils. But if permitted he should like to say that in his opinion, having regard to the prosperous state of the finances, no case had been made out for the continuance of the tax.

The motion was then agreed to, and the Bill referred to a Select Committee, consisting of the Hon'ble Messrs. Buckland, Field, O'Kinealy, Inglis, Knight, Kristodas Pal, and the mover, with instructions to report at the next meeting of the Council.

DRAINAGE AND IMPROVEMENT OF LANDS.

On the motion of the HON'BLE MR. DAMPIER, the Hon'ble Peary Mohun Mookerjee was added to the Select Committee on the Bill to provide for the drainage and improvement of lands.

The Council was adjourned to Saturday, the 28th instant.

EXPERIMENTS WITH CATTLE MANURE.

FINANCIAL DEPARTMENT—AGRICULTURE.

Calcutta, the 27th February 1880.

RESOLUTION.

READ—

A Resolution by the Government of India, Home, Revenue and Agricultural Department, No. 2—62-71, dated 12th February 1880, forwarding a report by the Superintendent of the Experimental Farm at Bangalore regarding certain experiments made with cattle manure in the cultivation of Queensland maize, and an article in the *Indian Agriculturist* on the subject of manures and their classification.

The experiments referred to were made at the Bangalore Experimental Farm for the purpose of testing the comparative value of manure under the system of cattle-box manufacture, as explained in the Superintendent's report, and of the two common methods of treatment used by the ryots in that part of the country. The Government of India is of opinion that similar experiments might usefully be undertaken in other parts of India by officers in charge of public gardens, jail gardens, or Government or Municipal farms, and directs that a careful record of such experiments should be kept, and that an account of them, including a table of statistics in the form prescribed, should be given in the annual reports furnished by such officers.

2. There are no model farms under Government in Bengal where these experiments could be carried out, but the Superintendent of the Royal Botanical Garden, Howrah, and the Inspector-General of Jails, will be asked if they could arrange to try them in any way. The papers will also be published in the *Calcutta Gazette*, in the hope that perhaps the Agri-Horticultural Society of India, Messrs. Thomson and Mylne of Behera, and other enterprising land-owners, European and Native, may be able and willing to give the experiment a trial.

3. The Lieutenant-Governor will be glad if any Societies or private gentlemen undertaking these experiments would consent to communicate the results to this office in the manner desired by the Government of India.

ORDER.—Ordered that a copy of this Resolution, and of the papers quoted in the preamble, be published in the *Calcutta Gazette*, and that copies be forwarded to the Superintendent, Royal Botanical Garden, and the Inspector-General of Jails, for information and guidance, with special reference to paragraph 2.

Ordered further that copies be forwarded to all Commissioners for information and guidance, and to the Agricultural Society and to Messrs. Thomson and Mylne for information.

By order of the Lieutenant-Governor of Bengal,

A. MACKENZIE,

Secretary to the Govt. of Bengal.

No. 2—62-71, dated Fort William, the 12th February 1880.

RESOLUTION—By the Government of India in the Home, Revenue and Agricultural Department (Agriculture and Horticulture).

READ—

A report by the Superintendent of the Experimental Farm at Bangalore for the half-year ending the 31st December 1878, regarding certain experiments made with cattle manure in the cultivation of Queensland maize.

READ ALSO—

An article in the *Indian Agriculturist* of the 1st September 1879 on the subject of manures and their classification.

OBSERVATIONS.—The Governor-General in Council is of opinion that experiments, similar to those made on the Bangalore Farm, might usefully be undertaken in other parts of India by officers in charge of public gardens, jail gardens, or Government or Municipal farms. A careful record of such experiments should be kept, and an account of them, including a table of

for litter; thus adding a large amount of organic matter which, placed in the soil, acts as a powerful retainer of moisture.

The cowdung employed in plot No. II was obtained from a grazing-ground and placed in a heap for some months until required,—the common native method of storing manure not required for fuel. The ashes were the result of burning an equal weight of the same cowdung representing the residuum from the “brelly” or cowdung cake used for fuel throughout India.

The experiment was to test the comparative value of equal weights of each manure. Had the experiment taken the form of using the total amount of manure obtained from a bullock in the same time, the result would have been more striking.

It may be remarked that dung was from mature cattle fed only on grass, without any gram, oil-cake, or other food to enrich the manure.

The crop on which the experiment was tried was Queensland maize grown on a poor light sandy loam. The seed was sown in rows two feet apart on the 15th April, and harvested for the sale of the green cobs 18th of August.

The rainfall during the period of growth was 3.85 inches, but this was supplemented with occasional irrigation from a well as required.

The following are the results per acre :—

Number of plot.			Manure per acre.	Green cobs.	Percentage of increase over unmanured plot.	Fodder.	Percentage of increase over unmanured plot.
				lb.		lb.	
Plot No. I	...	...	Cattle-box manure, 5½ tons	5,670	+74	9,710	+71
" No. II	...	...	Dry cowdung, 5½ tons	4,480	+83	7,160	+26
" No. III	...	...	Ashes from 5½ tons cowdung	4,020	+37	4,480	-20
" No. IV	...	...	Blank	3,800	.....	5,860	.....

The small quantity of manure employed, the minimum of water used, and the comparatively poor soil to which they were applied, fully account for the light yield, but the comparative result is very clear.

The yield of the cattle-box manure, both in cobs and fodder of 74 per cent. and 71 per cent. respectively over the unmanured plot, is remarkably high, the manure being well rotted and taken from the lowest part of the pit, where it was thoroughly saturated with urine.

The slight increase of four per cent. given by the ashes over cattle dung manure is due to the forcing action of the former, the whole of the constituents being released from the organic combinations they were held as inassimilable vegetable matter. But as the dung of an animal has been proved by careful experiments in Europe to contain only about one-fourth of the plant food voided in both dung and urine, it is not surprising to find the result of its action far less energetic than when both are combined, as in the case of the cattle-box manure. The actual decrease of fodder, when ashes were employed, is curious. The plant probably suffered under the too stimulating action of ashes from insufficient moisture, though the amount given, when aided by the organic matter combined both in the dried cowdung and the cattle-box manure, was adequate. The frequent waterings asserted as necessary for maize by native gardeners round Bangalore are probably largely due to their partiality for ashes as a manure, for on this farm, where cattle-box manure is chiefly employed, and where a deeper cultivation is given, crops are raised with a considerably smaller amount.

F. E. HARMAN, M.R.A.C., F.C.S.,

Superintendent, Experimental Farm, Bangalore.

MANURES AND THEIR CLASSIFICATION.

(From the “Indian Agriculturist.”)

THERE are three methods adopted to maintain and improve the fertility of soils—

1st.—Fallowing. | 2nd.—Rotation of crops. | 3rd.—Manuring.

The soil contains an inexhaustible supply of mineral food, not of course all available at once, but only so much of it as the natural processes of disintegration, mechanical and chemical, are constantly liberating. It may, we think, be as safely accepted that the air, water, and the soil contain an equally inexhaustible store of organic food.

It has been held that ammonia (nitrogen) exists in nature in such quantities that, with farmyard manure, it is quite unnecessary to supply it (nitrogen) in artificial manures.

The following experiment, conducted by Mr. Lawes, extending over eighteen years, we think may be held as conclusive in the matter :—

Two plots of land, side by side, for eighteen years were manured alternately with ammonia salts and phosphate of lime. In 1852 plot No. 1 was treated with ammonia, plot No. 2 received superphosphate. In 1853 No. 1 got superphosphate and No. 2 ammonia; and so on for eighteen years. Thus each plot had been nine times manured with ammonia and nine times with mineral phosphates. Over the whole time the average produce of both was exactly the same

24½ bushels; but the average of the eighteen crops grown by mineral manure alone, whether on plots No. 1 or No. 2, was only 17½ bushels; whilst the average of the 18 crops grown on either plot by ammonia salts was 31½ bushels, being an increase of nearly 14 bushels per acre more each year. These results, confirmed by Voelcker, and tested by the practice of agriculturists in a general way, may be safely accepted as conclusive.

Whatever may have been the practice in times goneby, when land was cheap and held on favourable terms, with comparatively little machinery in use for agricultural purposes, and when competition had not assumed the proportions that render it imperatively necessary for the agriculturists to avail himself of every legitimate means of increasing the weight and quality of crops,—when agriculture had no existence as science, except in the brain and practice of a few men much in advance of their time, like Blaimire, of Cumberland, who sowed those ideas which the clear-headed tenant-farmers of Cumberland and the North have certainly not let die, and who side by side with Joseph Hume, in the days long before liberalism became fashionable, protested, session after session, against extravagance, corruption, and incompetency,—certainly, nowadays, when the struggle for existence and the survival of the fittest are facts brought home to most men's consciousness, every possible means that may fairly be used to meet the exigencies of the present ought to be carefully studied and brought into practice.

Manures may be classified in several ways according to the view-point of the classifier. They may be classified in the three following ways, with sufficient exactitude to answer most purposes:—1st, as to their origin; 2nd, as to their composition; 3rd, as to their uses.

First, as to their origin.—They may be regarded as either 1st, natural; or 2nd, artificial. This division makes a clear distinction between all substances used as manures which are produced without man's intervention, and those which are the product of the ingenuity of man. Under the former, natural manures, such widely different substances as farm manures, guano, nitrate of soda, lime, and natural products such as these, are classed together; although in another view, guano, nitrates, lime, &c., though natural products, are nevertheless artificial manures. More correctly speaking, however, the term artificial might be used to indicate those substances manipulated by the art of man to serve his purposes; and they would embrace every manufactured substance introduced as a fertilizer, such as dissolved bones and mineral and bone superphosphates of all kinds, as well as those compounds prepared by manufacturers to meet the wants of particular crops—tea, indigo, coffee, grass, potato, turnips, &c.—and sold under various names. Manures might also be classified either as to their origin or composition, as—1st, animal; 2nd, vegetable; or 3rd, mineral. A classification of this kind, however, is of so vague and general a character as to render it of little practical use.

Second.—Manures may be classified as to their composition as either 1st, general; or 2nd, special.

1st.—A general manure is one which will supply to the soil, and consequently to the crops grown on the soil, sufficient plant-food of all kinds to keep up the continual fertility of the land. Beef, mutton, wool, wheat, indigo, tobacco, tea, coffee, &c. cannot be taken year by year from the soil, cannot be sold off the land, and leave it in the same position it was before this process began. The speed with which crops and products of various kinds are prepared for the market is much in advance of the slow natural agencies which are continually acting on the dormant constituents of the soil and changing them into soluble plant-food. A general manure prevents, or at least retards, the consumption of the plant-food in the soil, and makes it possible to go on producing crop after crop with as much speed as the natural laws which govern its production will admit of. If added in sufficient abundance, it may enrich an otherwise barren or profitless soil, and so enable it to bear a crop that will more than pay the cost of production. General manures, then, must always be the most important, and no others would be used were it possible to obtain manures with the exact composition of the crops to be raised. This, however, cannot be accomplished, and so it comes to pass that there are always accumulating in the soil vast stores of plant-food, put in year by year in general manures and not removed by successive crops. Hence the use of some special manure which, while containing only one important food deficient in the soil, will enable the crop to take up the abundance of the others which the soil has accumulated or the general manure supplied. Farm manure stands at the head of all general manures. It thoroughly restores to a soil the power of reproducing the same crops. If supplied in sufficient quantities, it completely arrests exhaustion and restores fertility. It consists of the straw used for litter, and the solid and fluid excrements of the animals bred and used on the farm. The excrements are the waste products of digestion, absorption, and assimilation; and if the food of stock be rich in mineral matter, the bulk of the mineral constituents will re-appear in the excrements. Only a small fraction of the mineral substances contained in the food of men and animals is retained in their bodies after they have attained their full growth. When their bodies have been built up to their full size, the mineral substances contained in the excrements are almost identical with those contained in the food. If swine are fed on potatoes, their dung contains the mineral constituents of potatoes. The dung of horses contains the mineral matter of the hay, oats, &c., on which they are fed; and it is the same with cattle. The manurial value of their dung will vary with their food and with the stage at which they have arrived in their progress to maturity; the dung of lean and young animals being least valuable, because they retain in their systems the substances necessary to build them up. When the building process is completed, all that is wanted in food is to repair the waste tissues of their bodies. Farm manure is valuable not only for its mineral constituents, but also for the large quantities of organic matter, nitrogen chiefly, thrown

off by animals in the action of their vital functions. It has been calculated that 20 tons of farm manure contain $2\frac{1}{2}$ cwt. of nitrogen; and if a four-year rotation is assumed, this quantity is probably amply sufficient to supply the whole course. In addition to this, it should not be forgotten that there are vast quantities of ammonia, N.H. 3, and nitric acid absorbed by the soil and carried down into it by rain and dews. With the application of farm manure, then, there may fairly be supposed to be a gradual increase of valuable plant-food to the soil, and all other things being equal, a continual improvement of its productive powers.

2nd.—*Special manures* are those which contain chiefly one plant-food, though others may be present. They are only fitted to supply plant-food of a special kind, such as potash, nitrogen, or phosphorus. It must not, however, be supposed that they do nothing more: in every special manure there are always other ingredients which, while they add nothing, or very little, to their market-value, are of great use to the soil in helping to bring about its disintegration, and which play important parts in the decomposition and formation of compounds in the soil. It should, however, be borne in mind that they are valuable chiefly, if not solely, from a commercial point of view for their potash, nitrogen, or phosphorus, and that they should be supplied to soils where there is good reason to believe that these substances are deficient, or where their application would bring into usefulness other plant-foods in which the land abounds.

Farm manure may be used year after year in a perfectly mechanical fashion, and as a matter of course; but special manures demand thought and skill in watching results and arriving at conclusions. The agriculturist who observes and experiments with intelligence on the effects of special manures is in a fair way of making the most out of his land in the shortest time, and with the greatest profit. It is in the use of special manures, however, nitrates, kainites, and phosphates, especially the two former, that most unfortunate mistakes have been made by well-meaning men attempting to follow the practice—the successful practice—of some one who has made them his study, and so acquainted himself with all the conditions of success in their application. These conditions are so many and varied, and have reference to the character of soils, subsoils, and indigenous vegetation, which sometimes vary over comparatively small areas, that the indiscriminate application of special manures has frequently been followed by disappointment and loss sufficiently heavy to raise up a feeling of antagonism to what is called high farming and scientific farmers,—a feeling which the conservative tendencies alone of such a profession as that of agriculture were sufficient to rouse, without any additional element of distrust being brought into play, in the failure of imperfectly performed practical experiments. No physician, either in England or elsewhere, over the age of forty ever believed in Harvey and his theory of the circulation of the blood. Younger men accepted the great discovery, and their elders lived and died in the old faith. Much the same thing happens with most great truths; they have to fight their way upward to practical recognition. In this respect special and artificial manures are no exception.

The following are the chief special manures in the market. It should be borne in mind that special is here used in opposition to general, and that the designation artificial is much more commonly applied to them.

ARTIFICIAL OR SPECIAL MANURES.

Ammoniacal or Nitrogenous Manures.

Peruvian guano.	Manure cakes (rape).
Oblendorf guano.	Wool manure (shoddy).
Ammonia-fixed guano.	Grease cakes (refuse).
Ichaboe guano.	Dried blood.
Nitrate of soda.	Refuse of the bodies of fish and other animals.
Sulphate of ammonia.	

POTASH MANURES.

Kainite or crude potash.	Muriate of potash.
Calcined kainite.	Sulphate of potash.

PHOSPHATIC MANURES.

Dissolved bones.	Mineral superphosphate.
Ground bones.	Bone superphosphate.
Ash of bones.	A mixture of bone and mineral superphosphate.
Apatite.	Phosphatic guano.

There remains to be shortly noticed the classification of manures as to their uses. With regard to the effect produced on the soil and crop, manures may be classed as 1st, stimulating; 2nd, nutritive; and 3rd corrective. All ammoniacal manures may be classed as stimulating (see table above); and in its general action on the soil, lime may also fall under this head. Nutritive manures are those whose special function it is to supply a variety of plant-food, so that farm manures, general manures, would be classed under this head. There is of course no manure which does not supply plant-food of some kind in more or less abundance; but the term nutritive could not be applied with correctness to the artificial or special manures enumerated above, whose special functions are by supplying one kind of plant-food to enable the crop to take up large quantities of others stored in the soil. Stimulating manures, instead of retarding or preventing the exhaustion of the soil, quicken it, by enabling the crop to take up greater quantities of plant-food in a shorter period than without their use could be effected.

3rd.—*Corrective manures* are those whose application to land acts beneficially on some injurious substance, such as an acid, present in undue quantities in the humus, and it may be by liberating the double silicates already referred to in a former article, thus provide abundant food for a higher and more nutritious class of indigenous plants which ultimately drive out less desirable ones. The judicious and combined application of salt and lime to properly-drained marsh and low-lying pasture lands is something marvellous, and requires to be seen before it can be realised in its entirety.

The uses of lime and salt as corrective manures are of the very highest value; and the application of artificial manures of the costliest kind would probably be utterly useless, a waste of money and labour, until a change had been effected on the indigenous vegetation of the land. In salt the agriculturist possesses a substance by means of which he can regulate, to a great extent, the growth of the stem in all cereals.

Manures manufactured and sold to suit the requirements of special crops are probably increasing in demand. There are, however, so many conditions necessary to success in producing an article of this kind that there need be no wonder if they sometimes do not come up to the expectations of the purchaser.

Agriculturists themselves are probably the best parties to observe and experiment on the value of manures prepared to meet the requirements of special crops. It is only just to manufacturers to say that excellence in the preparation of special manures has been arrived at by very careful researches and by the mingling together of fertilizing matter in those proportions and combinations which experience has proved likely to produce beneficial effects. It is not the interest of the manufacturer to supply worthless stuff. It is his interest to prepare the purest, cheapest, and best special manure that a careful watching of the markets, and a wide experience of the requirements of a special crop, can command. The conditions of success are, however, as we have said, so numerous and varied that we may hopefully look for a greater development of this class of manure based on a wider and longer experience.

SPECIAL MANURES.

(1)—*For wheat, barley, or rye—*

2½ cwt. mineral superphosphate.

2 " sulphate of ammonia.

(2)—*Potato manure—*

4 cwt. mineral superphosphate.

2 " potash salts.

2 " sulphate of ammonia or nitrate of soda.

(3)—*For grass lands deficient in potash—*

2 cwt. mineral superphosphate.

1 " sulphate of ammonia.

2 " calcined kainite.

(4)—*Manure for tea, coffee, and indigo—*

30 per cent. of soluble alkalis, chloride of potassium and sodium, and sulphate of potash.

20 per cent. lime and magnesia.

7 " " phosphoric acid, equal to 16 per cent. of phosphate of lime.

The remainder being sulphuric acid, iron carbon dioxide, organic nitrogenous matter, and silica.

The composition of these special manures is varied according as the requirements of the crop and the nature of the soil are believed to stand in need of particular substances. The quantities given in (1), (2), and (3) are laid on for each acre; No. (4) is applied at the rate of 10 cwt. per acre.

In the classification in common use the term artificial is confined to that class of manures which have come into use during the last forty years. Some of these are in reality natural products, such as guano, nitrate of soda, and kainite, and are misnamed when called artificial; the phosphates of lime and the ammonia sulphates are manufactured products, and are correctly named when called artificial. Limes, chalks, and marls, which have been in use for ages, are correctly called natural. Farm manures are classed alone. Green manures have been in use in various parts of Europe from very early times. A crop is grown on the soil which is not taken off, but ploughed in. In Northern Germany farmers plough in spurrey or lupin to obtain a good crop of rye from a light sandy soil. In America clover and Indian-corn are used for this purpose. The plants best suited for green manuring are those which in a given time will produce the greatest amount of valuable available plant-food with least labour and cost. In England spurrey, mustard, and turnips are used. Green manuring adds no new mineral matter to the soil; it simply brings to the surface from greater or less depth material already existing, and spreads it out to meet the requirements of the succeeding crop. In addition to this, the crop used as a green manure extracts from the air valuable organic substances which are given up to the soil when the decomposition of the ploughed-in crop sets in. In green manuring there is an accumulating of mineral food, and a clear gain in organic matters.

Manures have not exhausted their usefulness when they have supplied directly plant-food. They exercise important chemical and physical influences on the soil, some of which have been already noticed; and although as yet they are but imperfectly understood, the value of their action is becoming day by day more clearly realised. Farm manure and green manures, which consist largely of decaying vegetation, are during the process of decomposition giving off large quantities of carbon-dioxide and other gases which act on the minerals contained in the soil at a depth and in positions where the carbon-dioxide of the air does not find a ready entrance. In this way they materially aid the disintegration of the particles of the soil and the liberation of soluble plant-foods. They effect the physical properties of soils. Heavy clays are rendered lighter and easier to work. Each straw is an underground drain conveying moisture and air where they would not otherwise easily find their way.

Rainfall, Weather, and State and Prospects of the Crops.

Statement showing Rainfall, Weather, and State and Prospects of the Crops in the different Districts of Bengal, as reported to Government during the week ending the 28th February 1880.

No.	District, and date of return.	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL.			
<i>Western Districts.</i>			
Burdwan Div.	1 Burdwan, Feb. 28 '80	0.4	Weather—seasonable. <i>Rubbee</i> crops being reaped. Outturn good. Public health good.
	2 Bankoora, „ 28 „ Bishenpore „ „	0.61 0.25	Late rain cooled air a little, but hot weather fast approaching. Winter crops being reaped. Fair outturn expected. Manufacturing of <i>goor</i> in progress. Crops in field benefited by rain and doing well. Cases of small-pox and cholera in Bishenpore sub-division.
	3 Beerbhoom, „ 28 „	Nil	Much cooler since rain. Crops less damaged by rain than was feared. Ploughing going on. Cholera decreasing in Rampore Hat but has broken out in Doobrajpore.
	4 Midnapore, „ 28 „	Nil	Weather—warm in early part of week, at present seasonable. State and prospects of crops favorable. General health good.
	5 Hooghly, „ 28 „	Nil	Weather—clear during greater part of week. Clouds on 26th and 27th, but no rain. Few crops on ground. A few cases of small-pox in thanas Serampore, and Gooptiparah; some cases of cholera in Polba and Bolagur.
	Howrah, „ „	.....	Report not received.
<i>Central Districts.</i>			
Farrukh Div.	6 24-Pergunnahs, Feb. 28 '80	0.10	Weather—cloudy and seasonable. Prospect of winter crops satisfactory. Preparation of lands for early rice, jute, &c., rapidly going on. Public health generally good. A few cases of cholera in Bussirhat, Barnaset, and Satekhira sub-divisions.
	7 Nuddea, „ 28 „	Nil	Weather—warm. Winter crops fair, though wheat and gram somewhat injured by late rain. Public health generally good. A few cases of cholera.
	8 Jessore, „ 28 „	Nil	Weather—fair and daily growing warmer. Prospects of crops on ground generally good. Price of rice stationary. General health good.
	9 Moorshedabad, „ 28 „	Nil	Weather—seasonable. Prospects of crops continue good. Fever and cholera in mitigated form still in some thanas. Small-pox in thanas Jellinghi and Kalyangunge.
Rajshahy and Coon Bheer Div.	10 Dinagore, Feb. 27 '80	Nil	Weather—getting warmer. Prospects of <i>rubbee</i> crops good. Three-fourths of sugarcane cut. Rice 15 to 20 seers per rupee.
	11 Rajshahy, „ 28 „	Nil	Weather—getting gradually warmer. Sowing of <i>amun dhan</i> and early <i>teel</i> continues. <i>Boro dhan</i> thriving. Mustard being cut. Prospects of <i>rubbee</i> crops good, though <i>khesaree</i> and peas suffered somewhat by late heavy rain. Common rice 18½ to 19½ seers per rupee.
	12 Rungpore, „ 27 „	Nil	Weather—becoming warm. State and prospects of winter crops continue satisfactory. Public health good, except a few cholera and small-pox cases.
	13 Bogra, „ 28 „	Nil	Weather—warm in day. Outturn of mustard good. <i>Jali ass</i> being sown in <i>poli</i> lands.
	14 Pabna, „ 28 „	Nil	Weather—getting warmer at noon; mornings and evenings cool and pleasant. Prospects of crops good. Health of people good.
	15 Darjeeling, „ 28 „	Nil	Weather—cloudy and occasional sunshine; getting warmer. No crop of importance. Land being cleared for <i>bhadai</i> rice.
	16 Julpigore, „ 28 „	Nil	Weather—very hot in day; mornings and evenings still pleasantly cool. Sugarcane turning out well; other crops, such as mustard, wheat, and barley, a fair average.
	Cooch Behar, „ 28 „ Dinbatta „ „ Mathabhanga „ „ Meckligunge „ „	Nil 0.95 0.84 0.45	Weather—fair. Becoming warm towards end of week. Rain general and much benefited all crops. Rice Rs 1-14 per maund in town. Early rice fields being ploughed. Small-pox very prevalent in places.

No.	District and date of return.	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL.—(Continued.)			
<i>Eastern Districts.</i>			
Dacca Div.	17 Dacca, Feb. 28 '80	1.1	Weather—fair and bright. State and prospects of crops favorable. Public health good.
	18 Furreedpore, „ 28 „	Nil	Weather—rather cool. Prospects of crops continue good. General health good.
	19 Backergunge, „ 26 „	Nil	Weather—warm, with occasional clouds. Rain last week much benefited <i>teel</i> sowings and cold-weather crops generally. Public health good.
	20 Mymensingh, „ 27 „	Nil	Weather—fair and seasonable. Prospects very favorable. All crops promising well.
	21 Tipperah, „ 27 „ Brahmunberiah „ „	0.30 0.74	Weather—fair and cold at beginning of week. Cloudy and much warmer towards its end. <i>Boro dhas</i> promises well. Ploughing going on vigorously.
Chittagong Div.	22 Chittagong, Mar. 2 '80	Nil	Weather—seasonable. Prospects of cold-weather and spring crops satisfactory. Cholera still prevalent in Moiscal. Cattle disease in some parts of district. Common rice about 15 seers per rupee.
	23 Noakholly, Feb. 26 „	Nil	Weather—much colder. Prospects of winter crops promising. Isolated cases of small-pox. Fever prevailing in extreme east.
	24 Chittagong Hill Tracts, „ 24 „	Nil	Weather—very cold throughout week. <i>Jam</i> cutting still continues. Tobacco and other cold-weather crops thriving well.
	Hill Tipperah, „ 25 „	Nil	Weather—seasonable. State and prospects of crops favorable. Public health good.
BEHAR.			
Patna Div.	25 Patna, „ „	.....	Report not received.
	26 Gya, Feb. 25 '80	Nil	Weather—cold. Maximum reading in shade 86°5'. <i>Rubbee</i> generally reported good. Public health good.
	27 Shahabad, „ 26 „	Nil	Weather—fair, with strong west wind. Prospects of <i>rubbee</i> good. <i>Raker</i> nearly cut. <i>Masur</i> and peas continue to be harvested. Public health good.
	28 Darbhanga, „ 26 „	Nil	Weather—seasonable. Prospects of <i>rubbee</i> crops continue favorable. Prices stationary. Public health good.
	29 Mozufferpore, „ 26 „	Nil	Weather—fair. State of crops continues very satisfactory.
	30 Saran, „ 26 „	Nil	Weather—fine and cold; west wind prevailing. Cold-weather crops progressing well. Prices stationary. Public health good.
	31 Champaran, „ 26 „	Nil	Weather—fine; strong west wind. State and prospects of crops very good.
Bhagalpore Div.	32 Monghyr, Feb. 26 '80 Begooseraï „ „ Jamui „ „	Nil 0.2 0.75	Weather—west wind, but still cool. State and prospects of crops good.
	33 Bhagalpore, „ 26 „	Nil	Weather—cold, with high westerly wind. Cold-weather crops promise an excellent outturn.
	34 Purneah, „ 26 „	Nil	Weather—seasonable. <i>Bhadoi</i> ploughing commenced. Public health good.
	35 Maldah, „ 26 „	Nil	Weather—clear and bright; getting hot. Prospects of crops and public health good.
	36 Sonthal Perga, „ 26 „	Nil	Nights and mornings cool; days hot. Ploughing going on.

No.	District, and date of return.	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
ORISSA.			
Orissa Div.	87 Cuttack, Feb. 23 '80	0.03	Weather—getting warm. <i>Dalua</i> crop progressing well. Small-pox still prevalent. Common rice 17½ to 21 seers per rupee.
	88 Pooree, " 26 "	0.32	Weather—getting warm. Harvesting of <i>saral</i> rice nearly finished. <i>Dalua</i> rice progressing well. Cold-weather crops doing well. Most cereals have come into market. Small-pox still prevails. A few cholera cases. Rice 20 to 23 seers per rupee.
	89 Balasore, " 27 "	0.08	Weather—seasonable and fine. Slight rain during week. Prospects of crops good. A few cases of small-pox and sporadic cholera.
CHOTA NAGPORE.			
South-West Frontier Agency.			
40	Hazareebagh, Feb. 27 '80	Nil	Weather—seasonable. Late rain has facilitated preparation of land for next crop. Slight rain in several places this week which has also done good. Prospects excellent. Public health good.
41	Lohardugga, " 28 "	0.27	Weather—generally fine. A smart shower on 27th. Prospects continue good. A little damage done here and there in interior by hail. Small-pox still prevalent; otherwise public health good.
42	Singbhoom, " 27 "	Nil	Days very warm. Nights cool and pleasant. Very little crops on grounds. Cholera has appeared in one tola of Chyebassa town.
43	Manbhoom, " 28 "	0.82	Storm of wind, rain, and hail with thunder and lightning on evening of 26th. Weather otherwise fair and pleasant. Cereals, pulses and other <i>rubbee</i> crops doing well. Sugarcane being pressed. Ploughing progresses on uplands. Public health generally good. Govindpore report not received.

Published for general information.

CALCUTTA, STATISTICAL DEPT.,
The 2nd March 1880.A. MACKENZIE,
Secy. to the Govt. of Bengal.

Abstract of Observations as received in the Office of the Meteorological Reporter to the Government of Bengal during the month of January 1880.
N. B.—The Barometric data are reduced for temperature and not for height above sea-level.

STATIONS.	Height above sea-level.	BAROMETER.			RADIATION THERMOMETER.						TEMPERATURE OF AIR.				VAPOUR TENSION.				HUMIDITY.			RAIN-FALL.								
		MEAN OF			SOLAR.		GROSS.		MEAN OF		MEAN OF		MEAN OF		MEAN OF		MEAN OF		From minimum.	Mean.	From minimum.		Mean.	10 hours.	16 hours.	Number of days.	Inches.			
		Mean.	10 hours.	16 hours.	Range.	Mean.	Above max. in shade.	Max.	Min.	Below max. in shade.	Mean.	Max.	Min.	Day.	Night.	Mean of max.	Mean daily range.	Mean of min.										Mean.	10 hours.	16 hours.
Seahagar	333	30.690	30.754	30.611	143	139.1	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	3	1.03			
Gospara	330	30.707	30.759	30.590	139	139.1	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	6	0.77			
Sitabar	87	30.997	30.939	30.834	125	133.8	56.3	4th	149.3	46.0	9.7	27th 37.8	77.5	63.2	63.2	63.2	63.2	70.8	28th	77.5	28th	77.5	28th	77.5	28th	6	0.93			
Darjeeling	6913	30.389	30.435	30.356	107	138.8	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	6	2.45			
Purneah	125	30.967	30.918	30.797	131	138.8	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	6	...			
Purthunga	16632	30.823	30.799	30.771	105	138.4	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	2	0.33			
Patna	179	30.917	30.884	30.759	125	133.2	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	1	0.19			
Gya	375	30.931	30.879	30.771	105	133.2	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	1	0.61			
Bazareelagh	3010	30.817	30.773	30.671	102	138.8	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	1	0.15			
Berhampore	6645	30.907	30.867	30.850	137	138.4	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	1	0.68			
Rudwan	9909	30.875	30.856	30.819	138	137.1	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	1	0.01			
Jessore	353	30.936	30.908	30.871	121	134.5	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	2	0.72			
Patna	35	30.937	30.905	30.871	121	134.5	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	2	0.13			
Chittagong	867	30.856	30.841	30.819	105	138.8	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	2	0.53			
Dumagui	...	30.856	30.841	30.819	105	138.8	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	2	1.54			
Alpore Island	2138	30.859	30.832	30.808	134	131.5	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	1	0.05			
Singur Island	8	30.872	30.845	30.821	136	133.9	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	1	0.13			
Cuttack	80	30.889	30.867	30.834	133	133.9	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	1	0.91			
Pase Point	1744	30.888	30.867	30.834	133	133.9	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	1	0.03			
Varanasi	31	30.951	30.924	30.895	123	134.8	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	2	0.60			
Akrah	2044	30.919	30.882	30.853	119	133.9	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	2	0.59			
Port Blair	6116	30.867	30.819	30.781	108	144.4	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	7	2.59			
Gospara	330	30.610	30.676	30.633	143	139.1	50.1	30th	132.2	47.6	4.1	3rd 39.2	72.0	60.3	50.4	63.7	62.4	70.8	31st	72.1	31st	72.1	31st	72.1	31st	3	0.43			

CALCUTTA (ALPOTRE).

Mean barometric pressure of 24 years	30.014	Mean temperature of 24 years	67.7	Mean humidity of 24 years	67.7	Mean rainfall of 49 years	0.43
Baro. ditto of 1880	29.858	Ditto ditto of 1880	65.8	Ditto ditto of 1880	65.8	Actual fall in 1880	0.05
Defect in 1880	...	Defect in 1880	1.9	Defect in 1880	1.9	Defect in 1880	0.38

CALCUTTA,
The 28th February 1880.

JOHN ELIOT,
Meteorological Reporter to the Govt. of Bengal.

Mean Pressures and Temperatures of the preceding Table reduced to sea-level, with Anemometric Results and Cloud Observations.

STATIONS.	Mean barometric pressure reduced to sea-level.	Mean temperature reduced to sea-level.	WIND.										Percentage and resultant.	Mean velocity daily.	Mean clouds.
			North.	North-east.	East.	South-east.	South.	South-west.	West.	North-west.	Variable.	Calm.			
Seebaugor ...	30.042	61.4	4	21	17	4	...	6	6	4	...	1	43 N 57° E	39.2	6.19
Goalpara ...	30.002	61.4	...	8	19	...	...	...	1	4	...	21	41 N 86° E	102.6	3.48
Silchar ...	29.999	60.4	0	13	20	3	2	8	6	1	...	4	34 N 73° E	54.9	4.06
Darjeeling ...	...	...	...	...	...	10	17	0	4	...	...	24	47 S 46° W	32.5	5.24
Purneah ...	30.084	63.7	1	7	10	3	2	3	28	8	...	...	31 N 74° W	49.0	0.28
Durbhunga ...	30.000	63.1	1	4	8	2	2	14	24	7	...	...	44 S 80° W	48.9	1.32
Patna ...	30.008	61.8	1	3	6	2	1	7	38	6	...	1	57 N 59° W	13.0	1.74
Gya ...	30.017	66.4	8	1	...	...	2	...	14	51	...	16	57 N 53° W	30.5	2.26
Hazareebagh ...	30.004	65.7	4	3	3	1	...	6	15	30	...	...	67 N 57° W	131.1	1.76
Berhampore ...	29.977	64.7	16	4	...	3	...	9	16	14	...	...	55 N 53° W	61.1	1.66
Burdwan ...	30.070	67.4	12	4	1	3	6	2	11	15	...	8	39 N 47° W	54.7	1.60
Jessore ...	30.071	66.7	20	...	...	6	8	1	13	8	...	1	40 N 39° W	36.1	2.47
Dacca ...	30.071	68.1	2	7	2	1	3	10	4	6	...	25	15 N 79° W	58.0	3.08
Chittagong ...	30.070	69.3	2	17	7	1	3	9	11	4	...	8	11 N 4° W	62.0	2.08
Demagiri ...	...	...	0	...	2	8	8	9	7	12	...	10	25 S 69° W	...	0.58
Alipore ...	30.080	65.8	27	7	1	2	8	25	29	29	...	6	48 N 63° W	77.3	2.03
Saugor Island ...	30.078	68.4	35	17	2	1	23	29	2	15	...	...	16 N 54° W	104.3	2.40
Cuttack ...	30.081	71.7	...	19	1	...	8	7	13	4	...	15	17 N 37° W	32.5	1.43
False Point ...	30.086	67.7	15	7	14	2	7	6	7	4	...	...	19 N 32° E	173.2	1.79
Vizagapatam ...	30.093	75.2	3	20	21	6	2	21	39	12	...	...	19 N 79° W	46.0	1.63
Akyab ...	30.041	71.3	3	17	11	1	1	4	12	13	...	...	32 N 1° W	24.5	2.11
Port Blair ...	30.030	78.9	9	30	2	8	...	1	2	4	...	...	67 N 45° E	174.6	3.85
DECEMBER 1879.															
Goalpara ...	30.016	64.8	...	7	25	9	...	...	...	1	...	20	57 S 89° E	81.3	1.56

NOTE.

Barometric Pressure.—The pressures in column 2 of the above table for all stations below 500 feet are reduced from those given in column 3 of the table on the previous page, by adding the weight of a column of air of the temperatures given in column 18. For stations above 500 feet elevation the reduction is made by Captain Allan Cunningham's table, "Prof., Papers on Indian Engineering, No. CXIII." The temperatures at the sea-level are taken from column 3 of the above table.

Temperature.—The temperatures in column 3 are reduced from those in column 18 on the preceding page, by adding 1° Fahrenheit for every 450 feet.

Wind Resultant.—The resultant wind direction and its comparative predominance are calculated from the whole number of wind observations recorded during the month. The relative predominance in the direction of the resultant is given as a percentage of the whole number of observations. The direction is computed in the usual way by Lambert's formula.

Cloud.—This column gives the average proportion of clouded sky, a cloudless sky being indicated by 0, and one completely overcast by 10.

The above, being all comparable, afford the data for constructing a meteorological chart for the month, which will show the isobaric and isothermal lines and the resultant wind directions, which last may be represented by arrows of varying length, proportioned to the prevalence of the wind. To these may be added the rainfall from the previous tables.

JOHN ELIOT,

Meteorological Reporter to the Govt. of Bengal.

CALCUTTA,
The 28th February 1880.

Results of the Meteorological Observations taken at the Allpore Observatory from 22nd to 28th February 1880.

Month.	Date.	Maximum in sun.	Mean pressure barometer at 32° Fah.	TEMPERATURE.				HYGROMETRY.				WIND.		Rain.	WAVES.
				Mean.	Maximum.	Range.	Minimum.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.	Prevailing direction.	Miles recorded.		
1880.		☉	Inches	°	°	☉	☉	☉	Inches	☉	%		Inches		
Feb.	22nd	137.4	30.068	65.5	75.3	18.8	66.5	59.1	0.410	64.0	68	Till 0 A.M. N E by E, till midnight N N W through N E and N.	61	Nil	Partially cloudy, w and g.
"	23rd	144.3	30.040	69.0	70.0	10.0	59.4	62.9	498	58.8	73	Till 8.15 A.M. N N W, till 2.30 P.M. S through N and E, till midnight E N E through W and N.	63	"	Partially cloudy.
"	24th	143.9	30.031	70.6	81.4	19.4	62.0	65.8	574	62.8	78	Till 10 A.M. N N E through N E, till 12.30 P.M. S through E, till midnight S W.	73	"	Morning clear, day partially cloudy, night clear and w.
"	25th	146.7	29.959	72.9	83.9	18.8	65.1	63.1	624	65.2	78	Chiefly S W and W by S.	60	"	Morning partially cloudy, day and night clear and w.
"	26th	146.7	29.923	76.7	86.2	14.7	71.5	71.0	735	70.0	83	Till 7 A.M. W by S, till midnight S through S W.	117	"	Chiefly cloudy, w, o, g, t, l, br, and d.
"	27th	141.2	29.890	74.0	86.3	17.9	68.4	68.8	639	65.9	77	Till 3 P.M. W by N through S W and W, till midnight N W by N through N W.	100	0.05	Morning partially cloudy, day and night clear.
"	28th	140.7	29.88	71.2	85.9	20.6	65.3	69.2	346	18.8	47	Chiefly N W by W and N N W.	111	Nil	clear, f and w.

* Fell at 9 p.m. of the 28th.

The mean pressure of the seven days ... 29.986
 The average pressure of the corresponding period for 24 years, S. G. Office ... 29.907

The mean temperature of the seven days ... 71.3
 The average temperature of the corresponding period for 24 years, S. G. Office ... 76.2
 The extreme variation of temperature during the seven days ... 29.8
 The maximum temperature during the seven days ... 86.3

The mean relative humidity during the seven days ... 72
 The average relative humidity of the corresponding period for 24 years, S. G. Office ... 64

The total fall of rain from 22nd to 28th February ... 0.05
 The average fall of the corresponding period for 24 years, S. G. Office ... 0.11
 The total fall from 1st January to 28th February ... 2.96
 The average fall of the corresponding period for 24 years, S. G. Office ... 1.40

The mean pressure, temperature, &c., are deduced from the traces of the barograph and thermograph.

The maximum and minimum temperatures are obtained from self-registering thermometers. All the thermometers are verified, and the readings have been corrected to a standard constructed and verified at the Kew Observatory. They are exposed under a thatched shed open at the sides, and are suspended four feet above the ground.

The barometer readings are corrected approximately to those of the standard Newman's No. 86, formerly at the Surveyor-General's Office.

The hygrometric elements are obtained from Tables III, IV, and V of the official tables computed in the Meteorological Office, and based on Regnault's modifications of August's formula.

The direction and movement of the wind are taken from the trace of a Beckley's anemograph.

The mouth of the rain-gauge is one foot above the ground.

w dew, g gloomy, o overcast, t thunder, l lightning, br lightning reflection, d drizzling, f fog.

METEOROLOGICAL OFFICE, INDIA,
 The 1st March 1880.

JOHN ELIOT,
 For Meteorological Reporter to the Government of India.

Weekly Return of Traffic Receipts on Indian Railways.

EAST INDIAN RAILWAY.

Approximate Return of Traffic for week ended 21st February 1880 on 1,507½ miles open.

	COACHING TRAFFIC.							MERCHANDISE AND MINERAL TRAFFIC.							TOTAL TRAFFIC RECEIPTS.	TRAIN MILES RUN.		
	No. of passengers.	Coaching receipts.					Weight carried.	Receipts.					Coaching.	Merchandise.		Total.		
		Rs.	A.	P.	£	s.	d.	Mds.	Rs.	A.	P.	£	s.	d.	Rs.	A.	P.	
Total traffic for the week	155,902	2,20,855	13	0	20,795	2	5	15,61,393	30	0,27,524	1	6	57,523	0	10	8,54,379	15	3
per mile of railway	.....	150	8	2	13	15	11	.....	.....	410	5	5	28	3	4	566	13	7
for previous 6 weeks of half-year	1,000,951	17,01,085	9	9	150,915	7	0	10,39,502	30	41,29,551	11	0	377,002	10	3	59,25,540	4	9
Total for 7 weeks	1,155,943	19,22,941	7	0	170,910	0	5	1,12,90,885	20	47,59,078	12	0	435,515	11	1	65,73,920	4	0
COMPARISON.																		
Total for corresponding week of previous year	107,175	2,37,731	2	6	21,702	0	6	17,27,099	30	6,65,733	11	0	61,025	11	11	9,03,424	14	3
per mile of railway, corresponding week of previous year	.....	157	11	7	14	0	2	.....	.....	44	11	0	40	9	0	569	6	7
Total to corresponding date of previous year	1,107,539	17,72,713	10	3	162,498	15	0	1,23,98,093	20	18,65,713	5	10	446,023	14	6	66,38,127	11	1
																398,848	947,370	1,346,250

EASTERN BENGAL RAILWAY.

Approximate Return of Traffic for week ended 14th February 1880 on 171½ miles open.

	COACHING TRAFFIC.							MERCHANDISE AND MINERAL TRAFFIC.							Total receipts.					
	Number of passengers.	Coaching receipts.					Weight carried.	Receipts.												
		Rs.	A.	P.	£	s.	d.	Mds.	Rs.	A.	P.	£	s.	d.	Rs.	A.	P.	£	s.	d.
Total traffic for the week	37,165	39,959	0	0	3,662	18	2	2,30,590	0	41,083	0	0	3,765	18	10	7,438	17	0		
Or per mile of railway	234	232	10	6	21	0	7	1,342	3	259	3	3	21	18	0	43	5	1		
For previous 6 weeks of half-year	222,330	2,13,026	3	5	10,527	8	0	12,35,427	33	2,30,903	3	5	21,174	7	7	40,701	15	7		
Total for 7 weeks	259,504	2,52,985	3	5	23,190	6	2	14,55,027	33	2,72,076	3	5	24,990	6	5	48,130	12	7		
COMPARISON.																				
Total for corresponding week of previous year	40,041	44,602	5	4	5,005	4	3	1,94,727	31	32,705	13	1	3,006	8	9	5,011	9	11		
Per mile of railway, corresponding week of previous year	252	343	12	3	31	10	7	1,163	25	205	9	5	18	18	9	30	0	4		
Total to corresponding date of previous year	263,033	2,56,780	14	7	21,704	18	3	10,78,666	9	2,00,624	2	4	18,390	11	0	40,096	9	3		

BENGAL PROVINCIAL RAILWAYS.

Weekly Statement of Traffic Receipts.

No. 3.

Latest return received.	Name of Railway	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1ST JANUARY		Total increase in 1880.	Total decrease in 1880.									
			25th January 1879.	24th January 1880.	To 25th January 1879.	To 24th January 1880.											
1880.		Miles.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.					
24th January	Northern Bengal	230	20,422	0	0	0	0	62,557	0	0	1,01,691	0	0	39,134	0	0
7th February	Tirhoot	82	9,487	0	0	10,000	0	0	51,643	0	0	30,503	0	0	.....	1,160
15th ditto	Calcutta and South-Eastern	28	3,150	0	0	2,437	0	0	8,501	0	0	8,273	0	0	.....	1,228
24th January	Nalhati	27	1,877	0	0	1,540	0	0	6,309	0	0	5,000	0	0	.....	608
7th February	Patna and Gya	57	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total	424	31,036	0	0	54,651	0	0	1,09,910	0	0	1,77,764	0	0	79,830	0	0



SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, MARCH 10, 1880.

OFFICIAL PAPERS.

Non-Subscribers to the GAZETTE may receive the SUPPLEMENT separately on payment of Six Rupees per annum if delivered in Calcutta, or Twelve Rupees if sent by Post.

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Proceedings of the Council of the Lieutenant-Governor of Bengal for the purpose of making Laws and Regulations.

Saturday, the 28th February 1880.

Present:

HIS HONOR THE LIEUTENANT-GOVERNOR OF BENGAL, *presiding*,
 The Hon'ble G. C. PAUL, C.I.E., *Advocate-General*,
 The Hon'ble C. T. BUCKLAND,
 The Hon'ble H. L. DAMPIER,
 The Hon'ble A. MACKENZIE,
 The Hon'ble J. O'KINEALY,
 The Hon'ble SYUD AMEER HOSSEIN,
 The Hon'ble A. B. INGLIS,
 The Hon'ble BABOO KRISTODAS PAL, RAI BAHADOOR, C.I.E.,
 The Hon'ble J. B. KNIGHT, C.I.E.,
 The Hon'ble C. D. FIELD, LL.D.,
 The Hon'ble BABOO PEARY MOHUN MOOKERJEE,

and

The Hon'ble MAHARAJAH LUCHMESSUR SING BAHADOOR OF DURBHUNGA.

TRADES, DEALINGS, AND INDUSTRIES.

THE HON'BLE MR. MACKENZIE applied to the President to suspend the rules for the conduct of business, to enable him to proceed with the remaining

stages of the Bill to amend the law for licensing trades, dealings, and industries. The majority of the Council had served on the Select Committee and signed its report.

The PRESIDENT declared the rules suspended.

The HON'BLE MR. MACKENZIE then moved that the report of the Select Committee to amend the law for licensing trades, dealings, and industries be taken into consideration in order to the settlement of the clauses of the Bill. The Bill, he said, had received full consideration in Select Committee, and he believed that as far as details went it was open to no objection. It appeared to the Committee that, as now only a comparatively limited number of persons would be liable to tax, it was only fair that individual notices should be served upon those who were assessed. As a matter of fact, under the rules laid down by the Board of Revenue and sanctioned by the Lieutenant-Governor, notices were already served on all assesseees of the first four classes under the existing schedules, and the proposal now made was only making obligatory under the Act a practice which the Government had already recognized under the rules. The general notification would embrace the provisions of section 6 and the schedule of the Act, and would bind every person liable to the tax in the district; but a separate notice would be served upon all assesseees known to the Collector and entered in his list.

MR. MACKENZIE might also notice that in section 6 the Committee had provided that one license should suffice for each person within the provinces subject to the Lieutenant-Governor of Bengal. In the Bill before the Council of the Governor-General it was provided that one license might suffice for all the provinces in which license tax was levied. It was impossible for this Council to enact any provision to that effect, because the Council of the Lieutenant-Governor had no power to legislate for any other provinces than those which were subject to His Honor's administration. But the Bill passed for Bengal would be read with the Bill passed by the Imperial Council, and thus a double assessment upon the same individual would be, as a rule, prevented.

The only other alteration of importance which was made by the Committee was that power was given to the Commissioner of Revenue to revise the proceedings of the Collector, not only in cases where the Collector acted as a court of first instance, as it were, but also when he might deal with the assessments and proceedings of his subordinates. That was also an amendment of some importance which MR. MACKENZIE had no doubt would be recognized as an improvement. The other changes made in the Bill were only such as he had intimated when asking leave for its introduction.

The HON'BLE MR. INGLIS wished to say a few words in justification of the remarks he had appended to the report of the Select Committee. Hon'ble members were aware that he considered no case had been made out for the continuance of this tax, and in the Select Committee's report he stated his opinion that its operation should be for the present limited to one year, and that the proceeds of the tax should be strictly applied in providing for the relief and prevention of famine. He did not wish to take up the time of the Council in moving amendments to give effect to those views, when he knew that there was not the least chance of their being assented to by Government; but he craved the President's permission to state shortly his reasons for coming to those conclusions. In order to state those reasons fully, it would be necessary for him to criticise the financial policy of the Supreme Government. This, as hon'ble members were aware, it was not competent for him to do in that Council, and therefore he should endeavour to confine himself strictly to reasons which it seemed to him appeared on the face of the Bill now before us.

In introducing the Bill, the hon'ble member opposite stated that the amendments which had been made would afford relief to over half a million of tax-payers, and that the present Bill would affect only 66,000 odd persons throughout the whole of Bengal. While approving, as the Council must do, of the relief afforded by this Bill to so many small traders, the Members of Council ought not to lose sight of the fact that, by exempting from taxation, mainly for reasons of policy, such a large number of persons, they in fact removed the base of the edifice, as he had heard it expressed

within the last few days. The result would be that the whole superstructure resting upon this base must inevitably be weakened and would ere long fall to pieces. Every one of the 66,000 persons upon whom the tax now fell would to a man feel he had a grievance, and would not be slow to air it. Formerly, when the poorest traders were taxed, along with their well-to-do neighbours, the latter were prevented from making any great complaints, by the feeling that the tax pressed with much greater severity upon those below them in the social scale. Now this feeling would cease to operate, and Government would find itself in the presence of a powerful and discontented section of the community, who possessed the means and an organization for making their voice heard in a way that would probably cause considerable embarrassment. The exclusion of the professional and official classes from the operation of the tax would in many quarters intensify the dissatisfaction which existed. One way of disarming that opposition would be to limit the operation of the tax to one year, as he had suggested. The persons affected would then have some assurance that the subject would be reconsidered, and relief probably afforded them a year hence, when he hoped circumstances would favour a more equitable view of this question than that which at present found favour in influential quarters; or if that were not the case, good grounds would then have to be adduced for reimposing the tax.

Much of the existing opposition to the tax would, he believed, be removed if his other suggestion were adopted, that the proceeds be devoted strictly to the relief and prevention of famine. That was what Government promised to do when they imposed the tax two years ago. Their argument was—"We are imposing a special tax on the trading classes because they are the persons who mainly benefit in seasons of scarcity," and a promise was made that the money levied from a particular section of the community would be applied in a special way. Without admitting the soundness of the argument that famine taxation should fall mainly on the trading classes, he need only say that, if the proceeds of such taxation were applied to the general purposes of the State, as undoubtedly they had been, the special argument put forward by Government to justify such taxation fell to the ground. Unless the money was applied as promised, the tax in its present form could not be justified, as this was not the case of a tax which fell upon the whole community, but one imposed upon a selected section of the public who were already called upon to bear their share of the general public burdens. Government said they found it inconvenient to have their hands tied by being bound to spend the money in a particular way, but that applied with equal force to road and public works cesses. Those who paid those cesses had, as he understood, a guarantee as to the application of the money they paid, and that was all he asked in this case. After what had happened, he did not think those affected by this measure could be expected to rest satisfied with a mere statement as to the good intentions of the Government in this matter. He thought the Government should be anxious to relieve itself from the dilemma in which it was placed by conceding the point which he was now urging, and he hoped this view would be pressed on the attention of the Government of India by the Members of the Supreme Council.

The HON'BLE KRISTODAS PAL said that, after what had occurred at the last meeting of the Council, he did not intend to open his lips again on the subject; but he felt encouraged by what had fallen from his hon'ble friend to his right, and he wished to add a few words in support of what he had said. He agreed with the hon'ble member that, if the operation of the tax were limited to twelve months, at the expiration of that period it would be open to the Government to consider whether, in the then state of the finances, it would be necessary or expedient to retain the tax or not. The retention of the tax being now a part of the financial programme of the Government of India, it might not be open to this Council to consider the question of repealing it altogether. But if the Council would take into consideration the question whether the operation of the Bill should be limited to twelve months or not, he thought it would not militate against the policy which the Government had announced. It was true that the Government now looked upon the license tax as a part of the general revenues of the State, but there was nothing in the financial statement submitted in the other Council which showed that the Government would not be prepared to consider this time next year the question of continuing the tax or

not. Such being the case, BABOO KRISTODAS PAL thought it would not be inconsistent with the present financial policy of Government to limit the duration of the tax to one year.

With regard to the other point noticed by his hon'ble friend, to wit, that the proceeds of the tax should be applied to famine purposes as originally contemplated, he believed there was no difference of opinion on that subject. The license tax formed a part of the scheme of taxation intended chiefly for the purpose of promoting works which would be a protection or insurance against famine. That object was clearly set forth in the preamble of the Acts which were passed both by this and the Imperial Council, and the declaration in the preamble was also supported by the assurances given in the Council. The Hon'ble the Financial Member in his last Budget speech also pointed out that the Government had promised to carry out important public works calculated to serve as a protection from famine; and if the Government had not been able to carry out its intention, it was in consequence of orders received from the Home Government restricting public works expenditure. In India there was no difference of opinion upon this point that the proceeds of the famine taxes should be applied to famine purposes, that was to say, by the execution of works which would be in the nature of an insurance against famine. His countrymen did not object to the license tax, because they were assured that it was intended to serve as a Famine Insurance Fund, for the mitigation of the sufferings of the people from famine and for their future protection from similar calamities. But if the tax, as was now proposed, was to be included as a part of the general revenues of the State, those grounds which were considered as specially justifying the tax no longer existed, and the people therefore would have legitimate reason to complain of the misappropriation of the tax. He thought it would have been both reasonable and just if the original intention of the license tax had been adhered to, and its proceeds were set apart as a fund applicable to the prosecution of works calculated to operate as an insurance against famine.

With these remarks he would support the views expressed by the hon'ble member who had preceded him.

The HON'BLE THE ADVOCATE-GENERAL proposed to add a few words on the motion. With regard to the proposal that the Bill should be merely limited to one year, he had to observe that such a proceeding on the part of the Council would be based upon a wholly mistaken idea of the scheme according to which the tax was raised. All those who remembered the observations made by Sir John Strachey on the occasion when the tax was introduced, would recollect that the reasons which induced the Government to promote the measure, were that famines had lately been recurring, and that it became necessary to provide for them. Further consideration of the subject showed that the tax was intended to be, if not permanent, certainly not of the transitory character which this Council would assign to it if they limited the Bill to one year; and although he would join in the hope thrown out by the hon'ble members who had spoken, that the time might come when Sir John Strachey might reconsider the advisability of either abandoning or lessening this tax, still, under existing circumstances, he did not think it would be right or judicious for this Council to adopt the suggestion which had been put forward by the hon'ble member opposite (Mr. Inglis).

With regard to the other subject, that there should be an assurance that the proceeds of the tax should be devoted to the particular purpose for which it was raised, this Council could not be called upon to give that assurance. It had been given by the Government of India, and on that assurance this Council must rely. But if it were intended that section 30 should be amended in such a manner that there should be some directions contained in it that the amount collected by this tax should be carried to a separate account, and that the money should not be touched except for purposes connected with famine, such a proceeding would be wholly abnormal. The Government, in making up a budget for a particular year, and putting into it various items of expenditure for the coming year, such as military and civil expenditure, and so forth, professed to deal with certain taxes for general purposes of expenditure, it did not specify that particular taxes should be devoted to particular purposes, or profess to open out different heads of account. It would be unreasonable on